

SB

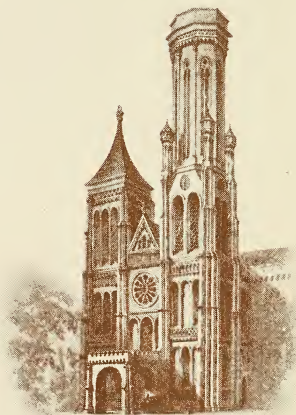
405

E39

Hort.

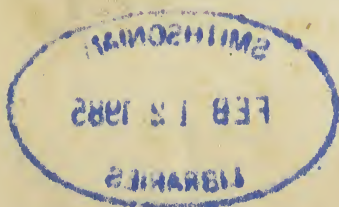


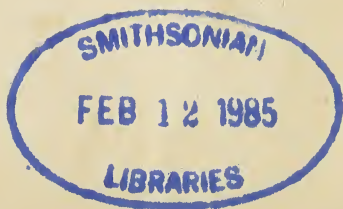
Smithsonian Institution Libraries



Given to the
Horticulture Branch Library
September 1984
by the
James Smithson Society

61-57





\$13
T
105
E39
Hort.

THE

AMERICAN FLORIST;

OR

A GUIDE TO THE MANAGEMENT & CULTIVATION

OF

P L A N T S

IN

CONSERVATORIES, GREENHOUSES, ROOMS, AND GARDENS;

To which are added,

DIRECTIONS FOR THE CULTURE OF ANNUAL, BIENNIAL,
AND PERENNIAL FLOWERS, TREES, SHRUBS,
BULBS, ETC., ETC.

~~~~~  
By JAMES NORMAN ELEY,  
Practical Gardener and Florist.  
~~~~~

HARTFORD.

PRINTED BY ELIHU GEER.
1845.



Entered according to Act of Congress, in the year 1845, by
JAMES N. ELEY,
in the Clerk's Office of the District Court of Connecticut.

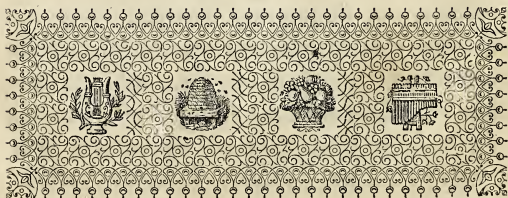




P R E F A C E .

AMONG the pleasurable engagements with which people have of late years been wont to beguile their leisure moments, that of Gardening has held a very prominent place. Not content with the cultivation of culinary vegetables, the national taste has been directed to the charming occupation of floriculture, and horticultural societies have been established in many sections of the country, which hold their annual exhibitions, where the display of flowers forms a *prominent*, if not the *principal* attraction. With the growing demand for horticultural and floricultural science, there has not been a correspondent amount of popular instruction. The books on these subjects were more calculated for those engaged in gardening as a business, than for such as resorted to it, merely for amusement and recreation. Com-

plaint has often been made to the author of the present work, of the want of a manual, in which the necessary information should be conveyed in a plain, familiar manner; and it has been his endeavor to supply the desideratum in the following pages. How far he has succeeded, it is the province of others to decide. It is his first appearance before the public *in print*, and he therefore deprecates any very severe criticism. It is to his *matter* that he invites attention, and that, he does not hesitate to say, he fearlessly submits to the perusal of every candid reader, as he has stated nothing that is not based on experience. The censure of the uninformed, or superficial, will not disturb his peace, because he feels persuaded that at the hands of the judicious, he shall receive whatever credit he may be entitled to, and this is all he desires.





INDEX.

Acacia	-	-	-	-	-	-	page 49
Achimenes	-	-	-	-	-	-	51
Agapanthus	-	-	-	-	-	-	52
Air	-	-	-	-	-	-	13
Aloe	-	-	-	-	-	-	53
Amaryllis	-	-	-	-	-	-	53
Alstroemeria	-	-	-	-	-	-	55
Annual Flowers	-	-	-	-	-	-	147
Anemone	-	-	-	-	-	-	56
Ardisia	-	-	-	-	-	-	57
Auricula	-	-	-	-	-	-	117
Azalia	-	-	-	-	-	-	58
Biennial Flowers	-	-	-	-	-	-	156
Budding	-	-	-	-	-	-	106
Cactus	-	-	-	-	-	-	59
Calceolaria	-	-	-	-	-	-	61
Calla Æthiopia	-	-	-	-	-	-	63
Camellia Japonica	-	-	-	-	-	-	64
Campanula	-	-	-	-	-	-	69
Carnation	-	-	-	-	-	-	71
Cineraria	-	-	-	-	-	-	75
Conservatories	-	-	-	-	-	-	28
Commelina	-	-	-	-	-	-	75
Cuttings	-	-	-	-	-	-	37
Chrysanthemum	-	-	-	-	-	-	76
Cleanliness of Plants	-	-	-	-	-	-	19
Dahlia	-	-	-	-	-	-	78
Erica	-	-	-	-	-	-	86
Erythrina	-	-	-	-	-	-	81
Euphorbia	-	-	-	-	-	-	120
Fuchsia	-	-	-	-	-	-	82
Gardenia	-	-	-	-	-	-	85
Geranium	-	-	-	-	-	-	111

Grafting	-	-	-	-	-	-	page 107
Greenhouse	-	-	-	-	-	-	40
Greenhouse Plants	-	-	-	-	-	-	26
Heat or Temperature	-	-	-	-	-	-	25
Hot Bed	-	-	-	-	-	-	48
—— for Annuals	-	-	-	-	-	-	149
Hydrangea	-	-	-	-	-	-	89
Hyacinth	-	-	-	-	-	-	90
Heliotropium	-	-	-	-	-	-	87
Ixia	-	-	-	-	-	-	96
Keeping Plants in Frames or Pits	-	-	-	-	-	-	47
Lachenalia	-	-	-	-	-	-	97
Light	-	-	-	-	-	-	13
Lobelia	-	-	-	-	-	-	98
Mathiola	-	-	-	-	-	-	99
Mignonette	-	-	-	-	-	-	100
Nerium	-	-	-	-	-	-	102
Orange and Lemon	-	-	-	-	-	-	104
Oxalis	-	-	-	-	-	-	98
Pelargonium	-	-	-	-	-	-	111
Perennial Flowers	-	-	-	-	-	-	158
Planting Trees and Shrubs	-	-	-	-	-	-	165-173
—— Bulbs	-	-	-	-	-	-	183
Poinsettia	-	-	-	-	-	-	119
Potting Plants	-	-	-	-	-	-	21
Primula Prænitens	-	-	-	-	-	-	116
—— Polyanthus	-	-	-	-	-	-	118
Pruning Plants	-	-	-	-	-	-	23
—— Shrubs	-	-	-	-	-	-	172
Ranunculus	-	-	-	-	-	-	121
Rose	-	-	-	-	-	-	124
Salvia	-	-	-	-	-	-	136
Schizanthus	-	-	-	-	-	-	137
Stove Plants	-	-	-	-	-	-	26
Staking Plants	-	-	-	-	-	-	174
Soil	-	-	-	-	-	-	17
Thunbergia	-	-	-	-	-	-	138
Tigridia pavonia	-	-	-	-	-	-	139
Tulip	-	-	-	-	-	-	140
Training Plants	-	-	-	-	-	-	23
Viola tricolor	-	-	-	-	-	-	143
Verbena	-	-	-	-	-	-	144
Watering	-	-	-	-	-	-	15



INTRODUCTION.

AMONG the improvements of this aspiring age, none have been greater than those which have taken place in gardening, but it ever has been an occupation highly esteemed by people of cultivated taste.

It is a pleasure not confined to the wealthy, but is an employment and profession for which no man is too high, or too low. The interest which flowers have excited in the breast of man, from the earliest ages to the present day, has never been confined to any particular class of society, or quarter of the globe. Nature seems to have distributed them over the whole world, to serve as a medicine to the mind, to give cheerfulness to the earth, and to furnish agreeable sensations to its inhabitants. The savage of the forest, in the joy of his heart, binds his brow with the native flowers of the woods, whilst a taste for their cultivation increases in every country in proportion as the blessings of civilization extend. Love for a garden has a powerful influence in attracting men to their homes; and on this account, every encouragement given to increase a taste for ornamental gardening is additional security for domestic comfort and happiness. It is

likewise a recreation which conduces materially to health, promotes civilization, and softens the manners and tempers of men. Flowers are, of all embellishments, the most beautiful, and of all created beings, man alone seems capable of deriving enjoyment from them. The love for them commences with infancy, it remains the delight of youth, increases with our years, and becomes the great ornament of our declining days. The infant no sooner walks, than its first employment is to plant a flower in the earth, removing it ten times in an hour, to wherever the sun seems to shine most favorably. The school boy in the care of his little plat of ground, is relieved of his studies, and loses the anxious thought of the home he has left.

In manhood, our attention is generally demanded by more active duties, but as age obliges us to retire from public life, the love of flowers and the delight of a garden, return to soothe the latter part of our life.

It has been the opinion of many naturalists that the annual development of flowers yields more real satisfaction than if all were ever flowering ; that their disappearance for a season enhances the value of their return ; and as they succeed each other in a continual round, the loss of any particular sort is never regretted. These ideas are much more applicable to herbaceous flowers and greenhouse plants, than to shrubs or trees ; the latter indeed we have but little control over, but shrubs and plants are easy of management, and many of them are so beautiful in flowering, and at the same time so finely scented, that we never can be tired of either their forms, colors or fragrance.



PART FIRST.

THE MANAGEMENT OF PLANTS IN ROOMS AND SMALL CONSERVA- TORIES.

THE different genera of Plants require some variation in their treatment as regards soil, watering, air, and heat. In light airy rooms many Plants will thrive a long time, and in conservatories attached to the dwelling where they can receive the sun and light, and be ventilated with fresh air as they require it, and have sufficient heat in winter by fire, they will thrive as well as in a regular Greenhouse; but in dark and close rooms, Plants will not thrive long, for they will draw up, spindle, and be weak for want of light and air, which are most essential to their cultivation. When it is desirable to have Plants in Flower in rooms of this description, such as Camellias, Magnolias, Geraniums, and other Plants, they will continue in Flower several days longer, by being in the shade, but as soon as the Flowers are past, they should be removed to the conservatories, or a light airy room, or they will soon spoil.

In placing the Plants in the rooms or conservatories, those with light, thin or succulent leaves, as the Geranium, Fuchsia, Rose, and also the fine-leaved Plants, such as Heaths, Acacias, &c., and herbaceous kinds, as Primulas, Daisies, and all Frutrescent or Half Shrubby Plants, should be placed near the windows or on the front shelves of the conservatory, as they require more sun and light than the thick coriaceous leaved Plants, as Orange, Lemon, Ficus, Camellia, &c., which may be placed at the back of the conservatories, for, if exposed to the full sun early in the Fall, or late in the Spring, the leaves are apt to turn yellow. In the house, where the windows are filled with the plants that require the sun, the thick leaved plants, such as Camellias and others, may be placed in other rooms, where they obtain light, without much sun, till they come into Flower, they can then be removed where wanted, to flower, after which they can be placed back again, till the season for setting them out of the house for Summer.

While the plants are in the house, they should be turned round occasionally, that the leaves may grow out regularly, and not crowd so close together as to interfere with each other, but have sufficient room to extend themselves.

When Plants are seen to wilt from too much sun, they should be removed to a more shady place, and others put in their stead, and should have as much air as can be admitted in fine days, by opening the windows of the conservatory, and if open for an hour or two, they will be benefited.

WATERING.

INJUDICIOUS watering does more injury to Plants in rooms or conservatories than most persons imagine, as Plants suffer from too much water as well as too little. Many persons think that they want water every day, and the more they give them the better. Others being very cautious will scarcely give them sufficient to sustain life. When Plants have had too much water, the leaves turn dark and flabby, and when too little, they turn yellow, and finally drop off. The best plan is not to water them till the soil in the pots appears dry, or their leaves droop, then give them sufficient water to wet the soil thoroughly down to the bottom of the pot, and do not give any more until they become dry again. Pour the water on the top of the pot and let it soak down to the roots, but do not let it stand in the pans under the pots, for it injures them very much, except they are aquatic Plants, and others that require a plentiful supply in the time of flowering, which will be noticed under their respective genus. The water used for the purpose should not be taken fresh from the pump, or cistern, in the winter season, but should stand in the room some time, or a little warm water may be used to take off the chill, to prevent the plants being checked in their growth. When the weather is warm and dry as it usually is at times in the spring and early part of summer, and the plants in full flower, they will require watering freely every day, especially such as are in small pots, and the pots full of roots. Those in larger pots, with more room for their roots

will not require it so often. The best time to water Plants in summer, is in the evening, as they will have the night to refresh themselves in, and in the winter season, in the morning, that the pots may be warmed in the sun, and they will not be subject to be chilled; although in rooms that are heated by furnaces, and a regular heat is kept, it will make but little difference; they may be watered when most convenient. As some Plants evaporate their moisture much faster than others, they will require watering more frequently, which will be indicated by the drooping of their leaves. In cloudy or rainy weather they will not need much water, except in the house, and the soil is dry. Plants accustomed to the house, should not be set out in heavy rains in winter, or early in the spring, as the rain is cold, and if they get saturated, it gives them a chill that takes them some time to recover, but in a warm rain in summer, they may be set out for an hour or so, then taken in again, which will greatly refresh them, and persons having only the house to keep them in will find them much benefited in summer, by setting them out in the evening to receive the dew, and taking them into the house in the morning. Plants in warm rooms at all times require to be kept a little moist, though they need most water when growing and flowering.



SOIL.

A SUITABLE soil for Plants is indispensable for their successful treatment, but as Exotic Plants are gathered from all parts of the world, and grow in various soils, it is necessary to plant them in as suitable ones as can be obtained. In the artificial cultivation of the different kinds treated of in this book, the soils I have found to suit them best will be mentioned under their respective genus, but the generality of Plants commonly grown in Green Houses, will succeed in a light, sandy soil, enriched with decayed manure, or vegetable mould, such as Myrtus, Jasmine, Heliotropium, Passiflora, Geranium, Senecia, Maurandia and any Plants of a free growth. Plants of a more shrubby growth, with roots of a stronger texture, as Acacia, Ardisia, Daphne, Orange, Lemon, Pittosporum, &c., require some peat soil mixed with the loam, about equal parts, and Plants with hard woody stems and very tender fibrous roots as Camellia, Rhododendron, Erica, Chorizema, require sandy peat or black soil, such as is usually got from swamps and ponds. It should be exposed to the sun, and air, and frost, and turned over with the spade to ameliorate it, for when first taken from ponds it contains an acid inimical to vegetation. After it has been sweetened by exposure to the weather for at least six months, or the longer the better, and mixed with some mould and thoroughly decomposed manure with sufficient sand to keep it from binding too hard in the pots, it will make a fine soil for Camellias, Azaleas, Ericas, Strelitzia, and all

Plants requiring peat. The Cape Jasmine will grow very luxuriantly in it. One-third of such peat, and one-third of sandy loam, and one-third of decayed manure from an old hot bed, well incorporated together and ameliorated by frost, will form what Florists term a light, rich soil, suitable for a great many Plants, such as Fuchsias, Calceolarias, Euphorbia, Mimosa, and any Plants requiring a mixture of loam and peat. The Cape Bulbs, as *Ixia*, *Tritonia*, *Sparaxis*, *Gladiolus*, &c., thrive best in light, rich sandy loam with a little peat. Succulent Plants, as the *Crassula*, *Mesembryanthemum*, &c., thrive well in a sandy loam, with a little lime in it. Roses thrive best in a good strong loamy soil, with decayed manure, though being subject to bake hard in the pots, a little sandy peat, or one-third sand should be used to keep the loam open. A hard clayey soil should not be used in pots if it can be avoided, as very few Plants will grow well in it. In case a person's garden consists of such soil, and it is necessary to use it, it should have considerable sand, chip, or decayed manure mixed with it to keep it from binding hard, and the pots should be well drained with pieces of broken pot at the bottom. Sandy soil should be as free from Oxyd of Iron as possible.

Persons procuring plants from Florists should, when they require shifting into larger pots, use a soil as near as they can get like that they received them in.



CLEANLINESS OF PLANTS.

UNCLEANLINESS of the leaves and stems of Plants, arising from dust or insects is very injurious to their growth, and should be removed whenever it appears, as follows: If the Plants are small, they may be cleaned by placing the hand across the top of the pot to prevent the plant falling out, then inverting it and immersing the plant in a pail of water, rinsing it well afterwards, being careful not to break the leaves, and if the Plants are too large, they may be cleaned with a sponge and a little soap and water, or clean water; squeeze the sponge a little, and wash the stems and branches, and in washing the leaves, let them lie flat on the left hand, and wash them with the right. Begin at the base of the leaves and wash from you to prevent breaking them. Or they can be washed with a water pot, by sprinkling the leaves, which in spring or summer will refresh them. It is very essential to the welfare of Plants to keep them clean, besides it gives them a fresh, healthy appearance. The little green fly (*Aphis*) is very apt to come on Plants in warm, moist weather, particularly on the young shoots, and under the leaves, doing them considerable injury, and should be destroyed as soon as it appears. Those who have a Conservatory or Green House, may destroy this insect by putting a furnace with some tobacco in it, to fill the house with smoke in the evening, and syringing the plants in the morning. Those having their plants in rooms and no convenience for smoking, may brush them off with a soft brush, or a moist sponge,

as they make their appearance. Snuff should not be sprinkled over the leaves, as it does the Plants as much injury as any other dust. The scaly insect, which is very common on Oleanders, and other thick leaved Plants, is not so easily destroyed, as it adheres close to the stem and leaves; the best way is to wash the plants with a sponge and soap and water, and where the insects stick in the axils of the leaves, they may be picked off with a pointed stick. Plants subject to them, should be cleaned at least once a year.

A sponge dipt in a little sweet oil and again in soapy water, and wiped up the stem and under the leaves, will keep them off a long time, but the oil must be used very sparingly or it will injure the Plants. The spiders are very troublesome to Plants, particularly the little red spider, which is so very small as to be hardly perceptible, webbing on the under side of the leaves and causing them to turn brown, and in warm, dry weather, they increase very rapidly, and will soon destroy the plants, if not checked. Sulphur is much recommended, but requires some care, particularly by persons not accustomed to use it, or they may destroy their Plants. The best way is to take some pounded Sulphur and put it in pans, and set the pans on the flue but not near the furnace or any part of the flue where it is liable to take fire, or sprinkle some on the coldest part of the flue, that is just hot enough to raise the fume. Do this in the evening, and syringe the Plants in the morning. This repeated a few times will gradually destroy the insects. Those having but few Plants and no convenience for using Sulphur, may trim off the leaves most infested, and wash the

Plants with soap and water, as before directed, (syringing them frequently,) which will keep them from doing much injury.

POTTING AND SHIFTING PLANTS.

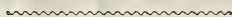
WHEN a Plant is first set into a pot, it will continue to grow till it has filled the pot full of roots. It will then produce its flowers, which will be developed in proportion to the strength of the Plant, the size of the pot, and the quantity of earth the Plant has to grow in; therefore Plants in small pots will flower the sooner, if the Plant is of a kind that has the property of flowering young. Otherwise it will make its first growth, then apparently rest to perfect its growth, and as soon as the Plant has done flowering, it will commence growing again till it has exhausted the soil in the pot and the roots become matted round the sides. It must then be repotted or it will suffer.

In potting or shifting Plants,—having the soil and pots ready provided,—begin by placing a piece of broken pot over the hole at the bottom, then put in a handful of small pieces of pots or gravel stones for drainage, then put in some of the soil over the drainage, more or less as may be required, to have the Plant as deep in the pot or a trifle deeper than it was in the one it came out of, and leaving about an inch

of space between the surface and the rim of the pot to allow for watering them. Take the Plant to be shifted, placing the left hand across the pot, letting the stem of the Plant pass between the two middle fingers, then invert the pot and tap the rim of the pot gently, till the Plant is loose, and take off the pot with the right hand, then let the thick matted roots at the bottom and sides be pulled off with the hand or a knife, loosing the ball, and shake off what old soil you can, without injuring the roots, then set the Plant into the fresh pot, and fill up the space with fresh soil, pressing it down with a piece of stick or the finger, and rapping the pot on the bottom to settle the soil, then give it a watering. Any young Plants potted in small pots in Autumn, when the roots grow out of the hole at the bottom, which they will do early in Spring, should be shifted into a size larger pot, and they will flower much finer; those in larger pots may have a little of the old soil taken off the top and a little fresh added to it; this is generally termed top dressing, which will help them considerably just before they come into flower.

As a general rule in potting Plants, it is best not to put them into too large a pot, but into pots just large enough to admit the roots without bruising them, as they will do better in moderately small pots than larger ones. The mould for potting should not be sifted but chopped up finely with a spade, as it keeps much looser and allows the roots of the Plant to spread, and the water to penetrate; for if sifted, it is apt to harden in the pot and become sour. When peat cannot be had, decayed leaves or rotten wood may be substituted,

the lighter and more sandy loam is the better, as it will require less peat and sand to be mixt with it. A certain quantity of sand is always a proper ingredient in mould to be used in potting or shifting Plants. If the garden has no sandy loam, scouring sand should be used, but for many shrubby Plants it will require washing to get out the salt.



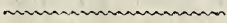
PRUNING AND TRAINING.

PERHAPS the greatest defect in Plants grown in rooms or conservatories is the want of pruning and training, for when that is omitted the Plants grow up tall, crooked, and unsightly objects. Now the beauty of a Plant consists as much in the habit of its growth and its symmetry and neatness, as in the Flowers. Many persons are afraid to cut off any part of a Plant for fear it should not grow out again, but when leaves have grown on any part of the stem, buds are formed at the axils of the leaves, on their stem, and as long as the stem continues to grow upwards, the leaves drop off below, leaving a long naked stem, particularly Geraniums, and other Plants of free growth, and the buds upon the stem remain dormant. Thus when the top of the plant or any part of the stem is cut off, the buds on the remaining stem will be excited, and grow out, making a fine bushy plant. When plants are young and growing, they should be tied up to neat sticks to

preserve an erect growth, and if required to be bushy, the top should be pinched off, which will cause them to branch out anew; these shoots should be let grow, as they will produce the flowers, and when they have done flowering they should be pruned, the flower stem should be cut out, and weak straggling shoots should be cut off close to the main stem, and the other branches shortened to within a few inches of the main stem. If they require shifting into larger pots and fresh soil, it should now be done, and in a few weeks they will grow out and make fine plants, ready to be taken into the house for winter. Such Plants as *Camellia*, *Rhododendron*, *Daphne*, and Plants of similar habits, seldom require pruning, except on dead branches, which should be cut out, and any straggling shoots cut off. But all soft-wooded plants require pruning once a year, which should be done after they have flowered, or before they begin to grow in Summer; that they may have time to perfect their growth before the winter. *Salvia*, *Chrysanthemum*, &c., should be cut down to within a few inches of the pot when done flowering.

Climbing Plants as *Passiflora*, *Hoya*, *Maurandia* and others, should have trellises or frames to grow on, made of wood or wire, but wire frames are best. The best shape is the circular, barrel, and conical—the circular can be made by taking a piece of strong wire and thrusting one end down in the pot close to the side, and then binding it over and thrusting the other end in the pot opposite, and crossing it with smaller wire, one or two inches apart, to tie the plant on. This shape answers well for ivy *Geraniums*, *Tropæolum*, or any plant that

shows well in a perpendicular shape. The barrel is made with four upright wires placed at right angles and hooped round with smaller wire, 2 or 3 inches distant; this shape answers well for Cactus. The conical is made with two long pieces of strong wire, thrust in the pot as directed for the circular trellis, only crossing each other at right angles on the top, and tied fast, then encircled with smaller wire in the same way as the barrel; this answers well for Passifloras, and Hoyas or other strong growing climbers. Bring out all the vines under the lowest circle next to the pot, then take one of the longest vines and train it round and round the frame elevating it as you proceed, so that the end will come to the top; tie it fast, and continue till your frame is covered, then cut off the rest of the vines, if any remain. A Passiflora six or eight feet long, may by this training be placed in the space of a foot in diameter, and 3 feet in height, making, when in Flower, a pillar of blossoms. As climbing Plants are very abundant in Flowers and easy of cultivation, they make handsome Plants when neatly trained.



HEAT AND TEMPERATURE.

PLANTS will generally grow in light airy rooms, where a person feels comfortable as regards temperature, not too hot and close, nor too cold. Although there is a great difference in Plants as regards heat,

those Plants that are natives of warmer climates, or within the tropics, as some species of *Acacia*, *Ardisia*, *Burchellia*, *Cactus*, *Clerodendrum*, *Strelitzia*, *Heliotropium*, *Crinum*, *Daphne*, *Ixora*, *Euphorbia*, *Gloxinia*, *Manettia*, and many others, which are what Florists term hot house or stove Plants, require a temperature of 60 to 80 degrees of heat, and many of them being natives of the Southern Hemisphere, flower in Winter, if properly treated, and would be desirable Plants for warm rooms. Most of the Plants grown in rooms and green houses are Plants from the temperate climates, as the *Rose*, *Erica*, *Geranium*, *Fuchsia*, *Coronilla*, *Pittosporum*, *Calla*, *Camellia*, *Jasmine*, &c. These are what are termed Greenhouse Plants, and usually flower early in Spring and Summer, resting a great portion of the Winter; these only require to be kept from freezing, or in a temperature from 40 to 60 deg., though most Greenhouse Plants, after resting, will commence growing in the temperature of 50 deg. Several Plants that are apt to lose their leaves in winter and remain in a dormant state such as *Hydrangea*, *Lemon-Verbena*, *Pomegranate*, *Erythrina*, &c., will keep in a cellar together with the summer growing bulbous Plants as *Tigerflower*, *Tuberose*, *Gladiolus*, &c. If a furnace is put into the cellar they should be in the coldest part, where they will not freeze, and if they become very dry, they will want a little water occasionally, to keep them from perishing. Many kinds of herbaceous Plants as *Primula*, *Auricula*, *Daisy*, *Violet*, &c., will keep in a cool room about 40 deg., and as they are easily excited to grow, can be removed into a warm room as wanted, and will

produce their flowers early in Spring, or the latter part of Winter. When any shrubby Plants as Geranium, Roses, &c., are placed in the window of a room and commence growing, if the young shoots are tolerably strong and the leaves green, it shows the heat of the room suits them. But if they grow weak and elongated, it shows that the room is too hot and close for them and they should be removed to one that is cooler and more airy.

In case of Plants getting frozen, which they are liable to do in winter, they should be removed to the kitchen or a place where they can be watered or the leaves washed with cold water, for as frost has a greater affinity for water, it will come out of the leaves in little icicles on their surface, which should be washed off as long as any appear. As soon as the frost is out of them, they may be placed in the rooms again, and except they are very tender Plants, they will receive but little injury, but if left in the room till it is warmed and they are thawed out dry, they would be liable to be killed or lose their leaves.

There are many plants grown in pots that are nearly hardy and do not require heat to keep them through winter, and if they get frozen by watering their leaves as before, they will receive but little injury. Although many Plants will keep alive during the winter while they are in a dormant state in the temperature between thirty and forty deg., yet all require the temperature of Spring or Summer to keep them growing.



MANAGEMENT OF PLANTS IN
CONSERVATORIES.

THE collection of Plants in conservatories attached to the house is generally of a miscellaneous kind, some few probably Stove Plants, though the greater part of them Greenhouse plants, and some that are hardy or frame plants, and many that are kept to set out in the Garden in summer. Now in placing the Plants in the house for winter, it is requisite to set such Plants as require the sun and light along the front shelf next the window, as Geraniums, Heliotrope, Roses, Cineraria, Primulas, Heaths, and all plants with light thin leaves. Plants with thick leaves as Orange, Lemon, Camellia, Daphne, &c., can be placed at the back next the wall of the house; the Cactus and other succulent Plants on the shelf over them, as they require the heat but not so much sun, and the more hardy Plants as Carnations, Violets, Verbenas, &c., also the small bulbous Plants as Oxalis, Ixia, &c., can be placed on the upper shelf or sides. The Stove Plants should be placed near the part where the heat is admitted, or in the warmest part of the house, and Plants that do not grow much in winter can be put under the front shelf, and the remainder where it is most convenient to place them. The management will be very similar to that of a Greenhouse.

When the Plants are first set in the Fall they should have as much air every fine day as can be admitted, and watered as they become dry. When the nights get colder and frost is expected, a little

heat should be admitted, just sufficient to keep out the frost, as it is best not to overheat them at the commencement of the winter, but let the temperature gradually lessen or many Plants may be excited to grow before they have recruited their strength, especially such as have been lately repotted. As soon as winter sets in, they will require heat sufficient to keep out the frost, and in very cold weather the windows must be kept close, but every fine day they should have air by letting down an upper sash, which is the best to open as the heated air given out at the top will moderate the cold air coming in, and it should be shut up early in the afternoon. The best time to admit air is from ten A. M. till two or three P. M., but in cold windy days or very severe weather it is best to keep them closed. The Plants should be looked over occasionally to pick off all dead leaves, and any that have insects or dirt on them should be washed with a sponge with soap and water, and where the surface of the mould has become green or foul, it should be removed with a piece of flat stick, but not deep enough to injure the roots, and a little fresh soil should be laid over them. As the spring advances they will require a more plentiful supply of air and water, which should be given them as often as the soil in the pots becomes dry, but they should not be kept saturated all the time as that would injure their roots, nor let flag much for want of it, as that would check their growth, and cause the leaves to drop off. They should have as much air in fine days as can be admitted, as it will prevent their drawing up weakly, and any Plants in small pots that begin to show their flower buds or the roots protruding out

of the hole at the bottom as Geraniums, Helitrope, &c., should be shifted into the next size pot, with the same kind of soil they were grown in.

It is a good plan to put a few bushels of soil in the cellar in the Fall, to use before it can be got from the garden in Spring, and any plants that require support should be tied up to neat sticks, as they advance in growth. As the Plants come in flower, they can be removed into the sitting rooms, if wanted, while the flowers last, but as soon as the flowers are past, they should be placed back in the conservatory again. In regard to temperature or heat to be kept during the winter, that will depend on circumstances, and the kinds of Plants the conservatory contains, or whether the greater part of them are Hothouse or Greenhouse Plants. If the greater part are hothouse Plants and it is desired to have as many flowers in winter as possible, it will be requisite to keep what is termed by Gardeners Stove Heat, that is about 55 to 60 deg. by night, with fire heat and 60 to 65 deg. by day. When the sun shines and the glass rises to 60 deg., a little air should be admitted to prevent the Plants from drawing, and as soon as the thermometer falls to 55 deg. the air should be shut off, as this is warm enough for the early winter months, November and December.—At the turn of the year as the days get longer with more sun and clear weather, and the plants are coming into flower and are showing their buds, the heat may be raised to 60 deg. by night, and from 65 to 70 deg. by day with sun heat, but do not let it be below 55 to 60 deg. at night, and give air every fine day, and attend to watering them as they require it,

and they will soon come into flower, and when they have done flowering the heat should be kept up while they are making their new growth, and to get their shoots ripened before placing them out for summer. Many Greenhouse Plants will bear this heat if strong Plants and well rooted in the Pots, as Camellias, Geraniums, Fuchsias, Tree-Pæonias, &c. Bulbs are very good to force, as Hyacinth, Amaryllis, Ixia, Lachenalia, Polianthus, Narcissus, &c. Where Plants have been forced a season or two, they will commence growing at the usual time in fall they have been accustomed to. The Plants forced in winter must be kept in the Conservatory till all danger of frost is over in Spring, and then they should be shifted into fresh soil, and be kept in as cool and shady a situation as possible in Summer, to rest and recruit their strength. When persons commence forcing Plants, they must be sure that they can command as much heat in severe weather, as they commenced with, for if they keep the heat at the commencement, and do not keep it regularly, they may fail of having flowers.

If it is only wished to preserve the plants in winter and let them flower as they come regularly on with the advance of the season, it will be only necessary to exclude the frost, or keep what is termed greenhouse heat, that is about 40 deg. at night, and 50 deg., by day though if you wish to have what flowers you can without forcing them very much, an intermediate heat from 40 deg., to 45 deg., by night, and from 50 to 55 by day will suffice, and towards spring, the glass may occasionally rise to 60 or 70 deg. In fine sunny days, air must be admitted in proportion; the treatment

in other respects as mentioned in the preceding. When plants are kept in rooms, it will be best to place such of them as are tender in the warmest rooms, and the more hardy in the cooler ones, and persons having only the room windows to keep their plants in, will find it to their advantage not to have too many crowded together, but have a few good Plants in pots proportioned to their size, that can be placed conveniently to the light, and attend to keeping them clean by sponging their leaves and watering as they require it, and occasionally turn them round to the light that they may grow regularly, and remember that a few good handsome Plants will give more satisfaction than any number of inferior ones.

When the winter is past and spring commences, the Plants in flower and those with their buds coming on will want watering more freely, and more air given in fine days, though in cold cloudy weather the heat should be kept as usual, for many Plants that have done flowering and are making their growth for next season, as Camellias, Daphnes, Azaleas, &c., will require to perfect it before being placed out for summer, and Plants that lose their leaves in winter will now be growing, as Hydrangea, Lemon-Verbena, Erythrina, and should be placed near the windows to receive the sun, that the shoots may grow strong, and the seeds of any annual flowers that are required for the garden, may be sown in pots and placed at the front windows and attended as other Plants till it is time to set them out. As soon as all danger of the frost is over, which will be from the middle of May to the beginning of June, the Plants may be placed out in the Gar-

den for summer, the herbaceous and many summer flowering Plants can be turned out of the pots and planted where they are wanted to flower in the borders and be tied up to sticks to prevent their getting broken down. The shrubby and half shrubby Plants as Geranium, Rose, Poinsettia, &c., are best kept in pots, as they are apt to lose their leaves when taken up, and Plants that have done flowering should be pruned, and any that have grown too tall and straggling should also be pruned, that they may become good bushy Plants before autumn, and all that require shifting into fresh soil, should now be shifted. Calm cloudy weather is the best time for setting them out, and the most sheltered situation should be chosen, but such Plants as flower in summer can have their pots plunged up to their rims in the flower borders. The Plants with thick coriaceous leaves as the Camellia, Daphne, Cape-Jasmine, Pittosporum, &c., should be placed in a shady situation, for if exposed to the sun their leaves will turn yellow and the Plant get sickly. The pots should also be plunged up to their rims in soil, if it is dry or sandy; if a wet clayey soil, it is a good plan to get boxes, place them on the ground, bore a few holes in the bottom to let out the water, and set the pots in the boxes, and fill in between them up to their rims with sand or coal ashes to keep them from drying too fast, for the sun striking the sides of the pot is apt to injure the roots. The Cactus and other succulent Plants are best kept in the house or back shelf of the conservatory, as they require the heat but not much sun, and should be watered as often as the soil is dry, for if placed out and they get a

shower of rain on them and the sun should shine out hot afterwards, it scorches them and causes them to get spotted and decay. The fall and winter Bulbous flowering Plants, as the leaves die off, should be kept dry till they begin to grow. A shelf in the cellar is a good place to keep them in during summer. While the Plants in pots are out of doors, they should be regularly syringed with water in dry weather as late as possible in the afternoon. Many persons find it more difficult to keep their Plants in summer than in winter; the principal cause is allowing the soil in the pots to become too dry before they are watered, owing to the sun striking against the sides of the pot and scorching their roots, for when they are injured by drought, their roots usually decay on the application of water.

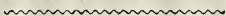
When a Plant appears sickly, it should be taken out of the pot and the roots examined, and all that are decayed should be cut off, and the Plant repotted in fresh soil and kept a little moist, but not too wet, and if not much injured, it will soon recover. When Plants are kept too wet or in too damp a situation, worms are apt to get in their pots, doing them injury by heaving the soil out of the pots, and injuring the fibres of the roots. If the plants are small, they may be taken out of the pots and the worms picked out of them and the plants replaced. If the Plants are too large for so doing, the worms may be got out with lime water which is made as follows: take a half a peck of lump lime, put it in a barrel, pour on it a little water, and as it slackens add more water and stir it with a stick. When it has slacked fill up the barrel

with water and let it stand two or three days to settle. When it is clear, water the pots two or three times with it, and it will cause the worms to come out. Plants will require to be repotted in spring at or before the time of setting out for summer, for this is the best time to repot plants as they have the summer to grow in, and when repotted late in fall they are apt to lose their leaves and seldom recover them till spring or when they commence growing. But Plants that are kept in pots the year round, will require to be examined in summer or early in Fall to see if they become root bound, (that is) the roots have become matted round the sides and the soil become hard as to prevent the water from soaking in amongst them. They should be repotted or they will get stunted for want of nourishment. It is not always necessary to put them into larger pots when shifted, but pull off the thick matted roots all round with the fingers so as to reduce the ball to half its size, and give it a rap on the ground to loosen it a little, then put it in the same pot again with some fresh soil at the bottom, and fill the vacancy with the same, and give it a watering. When the roots have grown through the hole at the bottom, it will not be necessary to pot them afresh, if the soil is not exhausted, but cut them off close to the pot with a sharp knife and give them a watering and shade them from the sun a few days till they recover. When Plants are thus checked, it will stop their growth and cause them to produce their flowers. When manure water, poudrette, guano, or other stimulants are used, they should be given the Plants during their growth and while they are flowering, and if the Plants are large

and the pots full of roots, it will encourage their growth and cause them to flower finer, but do not give them it too often, once a week or less (as they may require it) with clear water alternately, and when they have stopped their growth it should be discontinued, or it will cause them to get sickly by excess of nutriment.

As soon as there is an appearance of frost coming, such Plants as are in pots should be taken into the house or conservatory, and those that are tender that were plunged into the borders, and also any that were planted out of their pots in the garden, should, if tender, be taken up and potted and shaded from the sun till they have recovered; previous to taking them into the house, any of them that require it should be top dressed with a little fresh soil, and wash the outsides of the pots, and give them a good watering with the water pot over their leaves as well as their roots, as Plants need a good watering when first taken into the house. They will not require watering for some days afterwards, and will look clean, and keep the green healthy appearance, and not miss their removal from the night dews so much. It is an advantage not to have them get frosted, as they will keep their leaves on and continue growing much longer than if they were frozen. Such Plants as are hardier may be left out some time longer, but take them in before the frost gets hard enough to freeze the ground, or they may be injured. In case of frost coming on which it usually does at the end of September or beginning of October, and any Plants remain in the ground that are tender, they should be covered over with mats or other

covering. I have found hay to be the best covering, as it lies light on the Plants, and being dry, it takes nearly all the frost.



CUTTINGS AND SLIPS.

CUTTINGS and slips are taken from the mother Plant for the purpose of setting out, in order that they may make roots and form young Plants. Now in order to keep them alive till they have formed roots, it is usual to cover them with glass to prevent the moisture from evaporating from their leaves, and the soil from drying too fast. The cuttings that are slow of rooting are much forwarded by being placed in a hot-bed, and many kinds will not root without it, although many of the common kinds of Plants as Geranium, Rose, Calceolaria, &c., and many of the soft wooded Plants will root by being planted in pots, and placed in the conservatory or window, and shaded from the sun, and if the soil in the pots is kept a little moist they will root readily. Cuttings of woody Plants take root best in fine sand, and a little peat soil well mixed with it, for they strike more freely in it, and are easier to pot off, since the sand shakes clean from their roots which are very tender and are easily broken, but as the soft-wooded and Frutescent Plants will not root well in the sand, they must be planted in mould or sandy loam. In making cuttings, no more leaves should be

taken off the stem of the Cutting than from the part that is buried in the soil. The shallower they are planted in the soil the better, but they must be well fastened in the soil; the pots that they are planted in should be well drained at the bottom with potsherds or gravel, and the soil should be kept moist but not wet, and the Glass they are covered with should be taken off and wiped occasionally. When the cuttings are rooted, the Glass should be taken off to harden them to the air a few days, but do not give them too much water as the stem is apt to rot even after they have rooted. As soon as they are fairly rooted, they should be potted off in separate pots and kept shaded a few days, till they recover their potting. In preparing the cuttings they should be cut straight across the stem close under a joint, or axil of the leaves, and such as are slipped off from the stem should be pared smooth, with a sharp knife at the base. Many kinds of herbaceous Plants can be increased by dividing their roots, and such kinds as produce suckers from the root, or shoots near the surface of the soil, can be slipped off and planted in pots and shaded till they have taken fresh roots. When plants cannot be easily raised by cuttings, layering is resorted to, which is performed by taking a branch nearest the ground, and taking off such leaves as are in the way, and cutting the stem about half through at a joint or axil of a leaf, and splitting up about an inch; this must be put downwards in the soil and secured by a hooked stick if required, covering the soil two or three inches (more or less) according to the size of the layer. In taking off cuttings for planting, the shoots of the previous

year's growth should be used, but some kinds of Plants will grow best from young shoots, when they have grown two or three inches long, as Heath, Lemon, Verbena, &c., others from ripened shoots, as Pittosporum, Illicium, Lycium, Viburnum, &c., and others half ripened shoots, as Geranium, Coronilla, Rose, &c. In potting off Plants raised from cuttings, care is requisite not to injure their fibres, and they should be put in small pots at first, and the size of the pot increased as they grow, but do not give them too much water.

It may be well to observe that there is considerable difference between raising a plant, and growing it to any degree of perfection. A plant struck from a cutting in summer, and placed in a pot in the fall, and kept through winter in a Greenhouse in the common routine of watering and cleaning, &c., will necessarily come into flower in spring, and the flowers will be in proportion to the strength of the Plant; and with a view to have a Plant grow to any degree of perfection, it must be nursed along while young by repeated shifting into larger pots, as it requires it, and must have requisite heat and attention, situation, &c. Gardening is an art, and is only learnt by practice and close observation of nature.

To amateurs who desire to cultivate a fine specimen, I have given the method I have found to be successful in my own experience.

The necessary elements are Heat, Light, Air, Water, and Soil, and their management Planting, Training, Cleaning, and Pruning.

GREENHOUSE.

THE management of Plants in a Greenhouse will be the same (as regards the care of the Plants,) as before directed, and it will be only requisite to keep fire sufficient in cold weather to keep out the frost, and the more air is given them in fine weather the better. In fine mornings, give them air as soon as the sun has warmed the house, and shut it up again while the house is warm, by two or three o'clock, and in very severe weather, it will be well to light the fires as soon as the house is shut up, that the flues may get warm before the house cools too much, as it will be easier kept through the night, but in mild thawy weather, no fire will be required except frost is expected in the night; or the house becomes damp with continued wet weather; then a fire should be made to dry the house, as many Plants are more liable to be injured by damp than cold, and in case of frost getting in any part of the house, if the Plants are watered all over their leaves, or syringed before the sun shines enough to thaw them, they will not be much injured. The Plants will require looking over every day to see if any want water, which should be only given to such as are dry. Should any require fresh potting, it can be done in mild weather, and young Plants that were put in small pots in Fall should be shifted into larger pots early in Spring, and they will flower much finer. Cuttings of many kinds of Plants may be put in now, and many of the soft-wooded kinds require an annual propagation. Many of the choice kinds of Garden

Plants that increase by dividing the root may be dug up in the Fall with as much earth as will adhere to their roots, and placed under the stage of the Greenhouse and they can be divided and planted in pots any mild time during winter when convenient, and kept in the house till spring; they may then be planted out in the Garden where they are wanted to grow, and many bulbous and tuberous Plants may be potted to forward their growth, previous to planting them out to flower in summer. Seeds of Greenhouse Plants should be sown early in Spring, and placed on the shelf near the front window, or in frames, that they may be growing before the weather gets too hot, as when sown late in Spring or in Summer, they are liable to be killed with heat, and the sooner they are potted off when they have made a few rough leaves the better, as they will not suffer from moving so much as when they get larger.

When Plants in a Conservatory or Greenhouse have been kept through winter rather cool, or in a mean temperature of between 40 and 50 deg., they will be the more vigorous, and flower finer during the Spring months, and if desirable to have them flower in the house, it would be advantageous at the breaking up of winter to raise heat by fire at night to between 50 and 60 deg., for as the sun begins to have more power it will cause heat enough by day. This will forward them and cause them to come early into flower, so that beautiful flowers can be had during the months of April and May, before there are many flowers in the Garden; and also such Plants as flower early and commence making their young wood, would be much

benefited, and probably make their Spring growth and ripen their shoots, or nearly so, before the time arrived for placing them out for summer.

The common way of placing Plants out in their summer quarters in May, or as soon as a few hot days give the appearance of Summer, is very injudicious, for in this changeable climate some days being hot and the nights very cold, the temperature is often so low during the night that a complete check is given to their growth. The hot sun on them by day causes their leaves to assume a brown appearance, and the Summer is considerably advanced before they recover; but after having regained their energy and become as it were inured to their new climate, they usually grow very vigorous and by Fall become very large, especially such as are planted out of their pots, or whose roots have grown through the hole at the bottom of the pot into the Garden soil; though when they are taken up and potted for putting in the Greenhouse in the Autumn, they will often lose their leaves, and from their gross habit which they have now acquired, and from the lateness of the season, their shoots are seldom matured, consequently the Plants are in the worst possible condition to resist the effects of frost, mildew, and damp through winter, therefore it would be advisable to keep such Plants as are intended for the conservatory or room in their pots during the summer, and not place them out for Summer till their Spring growth is completed; then place them out in a cool airy situation, and if the pots are plunged in the ground, they should be examined occasionally to see if any have grown through into the ground; the pots should

then be lifted out of the place, and if they require it the plants may be changed into a fresh pot, as plants may be shifted any time during the summer; thus they will get established in their pots before frost appears, and their growth will be more regular, and they will be in better condition to keep through Winter. Such as are planted in the Garden should be taken up early, and when potted, kept shady and out of the wind as much as possible, for it dries them as much as the sun at this season of the year. By this means, they will be in a good condition for removing into the house on the approach of frost.

Any large tree growing plant as Pomegranate, Lagerstrœmia, Oleander, and any other shrubby Plants that are in very large pots or tubs can be taken out of their pots in the Spring, or in Summer after flowering, and have their Balls of earth and roots reduced to the size required, and planted in fresh soil in smaller pots. At the same time prune their heads and branches in proportion. By thus reducing their superfluity of growth, and confining their roots moderately, and supplying them with manure and water, during their growth and flowering in Summer, and keeping them rather dry in Winter, they will flower more abundantly.



PLANTS IN ROOMS.

THE treatment of Plants in rooms will be similar in many respects to that directed for the Greenhouse, as regards watering, keeping them clean, pruning, and occasionally changing the soil, &c., the principal difference is the change of atmosphere, the air in a room being, of course much dryer than in a Greenhouse.

Many persons suppose that Plants in Greenhouses are kept so warm and forced along to get them in flower in Spring, that when placed in a room they soon begin to decline in vigor, and the leaves curl up, and and the flowers droop. A few might do so at first, but the reverse is generally the case, for when the Plants are growing in a Greenhouse, it is the moist atmosphere of the Greenhouse arising from the evaporation from the soil in the pots, and dampness of the house, that conduces to the vigorous expansion of their foliage and flowers; so that when placed in a room, they miss the moist climate they have been accustomed to, and suffer from the heat and dryness of the room, and it is some time before they get acclimated, and this is especially the case in the Winter season or early in the Spring; therefore when first placed in a room, attention to watering them is requisite to keep the soil moist, that the plant may receive from the soil in the pot, moisture enough to supply the loss by evaporation. In consequence of the roots of a Plant being confined in a pot, the moisture is mostly limited to the evaporation of the surface and what the Plant absorbs,

and it does not require water oftener than the soil becomes dry, of which no specific time can be stated in particular, as that would depend on the vigor of the Plant and the heat of the room, but as soon as the soil becomes dry, water should be given it. When Plants are procured in Spring (that is in April or May,) and are in flower, they will want to be watered freely, probably one or twice a day in warm days, particularly if placed in a window exposed to the noon day sun, and those in rooms that are more shady, may not require to be watered so often. Plants that are kept in rooms in the Spring will continue in flower much longer than in a Greenhouse or in a Garden, for being sheltered from drying winds and not much exposed to the sun, their growth is slower and the flowers keep on much longer. But when they have done flowering and the weather has become settled and warm, say June or July, they should be pruned and repotted, if they require it, and placed in the Garden for Summer, to make their growth of young wood, for flowering the next season. When they are set out in the Garden or Yard for summer, it is best to place them in a group together, for by having them together they are more easy to water and take care of, and by sinking their pots a little more than half their depth in the ground, it will keep the sun from scorching their roots. Repot them in fresh soil, as they appear to require it, and they will by this attention be always ready to take into the house when the season arrives, which is much better than having them left till the frost comes, for repotting them at that season often causes them to lose their leaves.

Persons attending to the foregoing remarks will find a good deal of the difficulty of cultivating Plants removed, the secret of which consists in giving them light and air, and letting the pots be proportioned to the size of the Plant with sufficient soil for them to grow in, not keeping them too long in small pots after they have done flowering as they are apt to get stunted in their growth. In watering them, give them sufficient at a time to wet their roots to the bottom of the pot, but do not keep them saturated all the time, nor suffer them to wilt for want of it, and keep them clean from dust on their leaves, as it stops their pores and makes them turn yellow and sickly, and such Plants as require support should be tied up with neat sticks, and all straggling shoots should be cut off to keep the Plant in a handsome shape.

Where Plants have been attended to, I have frequently seen as fine or finer specimens of them growing in a room window than in a Greenhouse, the reason of which may be attributed to the greater care a few Plants can receive in a room than is practicable in a Greenhouse, and as coal is much used, there is less danger of frost getting in the house at night, but if the atmosphere of the room is dry, it will benefit the Plant to sponge the leaves with clean water occasionally, and keep the surface of the soil clean from filth, wiping the outside of the pot occasionally, for the moisture often causes foulness to gather on the pot which stops evaporation.



KEEPING PLANTS IN COLD FRAMES
OR PITS IN WINTER.

MANY Plants designed for the Garden or veranda in summer will keep through winter in a cold frame, as Roses, Hydrangea, Laurustinus, Cistus, Coronilla, Rhododendron, Carnations, and many hardy Greenhouse and tender herbaceous Plants that are liable to be killed in the garden in winter, as well as shrubs that are liable to be injured with hard frost. About the middle of October take a light frame, and place it on the ground in the most convenient part of the garden near the house or by a fence, the better for shelter, then dig out the earth one or two feet deep or according to the height of the Plants, and bank the earth around the outside of the frame, bevelling it to shoot off the water, then put a few old boards at the bottom for the Plants to stand on, and place in the Plants, the tall ones at the back and small ones in front; then place on the glass sashes. As long as the weather is mild, the glasses should be slid off in the day and drawn on at night except in hard rainy days, on which, tilt the sash with a piece of wood to give air and keep off the rain. Pick off all dead or decayed leaves and clean any foulness from the surface of the soil in the pots and give a little water occasionally to such as are dry.

As soon as there is an appearance of winter setting in, shut down the sashes close, and cover them with mats or straw and some boards to keep them from being blown off. If a fall of snow comes on, take a

spade and pat it down and place it well around the sides as it makes a close covering, let them remain covered as long as the cold weather lasts, and when there comes on a thaw, take off the covering and open the sashes, and if the frost has got in, sprinkle them with a little cold water, but do not wet them too much, draw on the sash and tilt up the back so as to admit air; and cover a single mat over them to shade them from the sun till they have thawed. When the frost is out of them, slide off the sash to let the Plants have air to dry them, then pick off all the frosted leaves and clean any foulness off the pots to prevent mildew, and as long as the thaw lasts, give them air in the day and close them at night, and when the weather gets cold again, cover them up as before.

By the beginning or middle of March, if the frame is wanted for a hot bed, such plants as are in pots can be removed into the house windows, and they will soon commence growing, and the Garden Plants can be placed on the ground with some earth thrown over them, and covered over with straw till the frost is out of the ground; they can then be set out. The hole may be filled with hot manure, if wanted, and the frame raised on the top of it, and the earth around the sides thrown over the bed and leveled, and as soon as the bed is warm, it will do to sow seeds to raise plants to set out in the garden.





PART SECOND.

THE CULTIVATION OF PLANTS. ACACIA.



ACACIA is a beautiful genus of Plants. Many are large growing shrubs, and are very ornamental in a Greenhouse, and some of the Dwarf kinds as *A. diffusa*, *A. alata*, *A. pulchella*, and others, are elegant Plants for light airy rooms, as they flower early in spring. They thrive best in a soil composed of loam and peat, and a good deal of sand mixt with it, with a little decayed manure or leaf mould. They should be placed in an airy part of the conservatory, and when in flower, or growing, they require a liberal supply of water, and when placed in the garden for summer, they should have an open situation and be watered regularly in dry weather, for if the roots become very dry, they are apt to perish. The Acacia is liable to the scaly insect, and should be washed with soap.

and water up the stems and limbs. It is usually raised from seed which should be sown early in spring, and the Plants potted as soon as they are a few inches high.

The *Mimosa Sensitiva*, is a sub-genus of *Acacia*, and a very pretty pot Plant. The seed should be sown in April in pots, and placed in a hot bed, and when the Plants have a few pinnated leaves, they should be potted off in separate pots and kept in the bed till they have got well growing. They can then be removed into the house, or where wanted, and shifted into larger pots as they require it, and trained neatly on a wire trellis. They will keep through winter in a light room with about sixty deg. of heat, and flower in the spring and produce plenty of seed. In default of a hot bed, the seed may be sown in pots and placed on a shelf in the conservatory, or sown in June, and the pots plunged in the garden up to their rims, and in summer they can be taken up and shifted into larger pots for winter.



ACHIMENES.

THE *A. coccinea* is an elegant little Plant bearing an abundance of scarlet blossoms, from August to October, making a pretty appearance in the Greenhouse or parlor window. It forms little imbricated roots around the main stem of the plant, which continue to enlarge after the plant has done flowering. At that time they should be sparingly watered, and in five or six weeks, desist entirely, and place the pots containing the roots, in a spare room or dry cellar, or a shelf in the greenhouse, where they must be kept dry until next spring. Early in March, if kept in the Greenhouse, or April if kept in rooms, shake them out of the pots, and divide the root into four or five pieces, by cutting it through or near the old stem, keeping each part as entire as possible, and pot them in as small pots as they can conveniently be put into, using light sandy loam and peat or leafmould in equal quantities; when potted, give them a watering, and if convenient place the pots in a hot bed, if not, place them in a warm room or the greenhouse, where they will soon begin to grow. They must be sparingly watered at first, as their growth will be slow until the weather gets warm. As soon as the Plants are a few inches high, shift them into the next size pots, and water them more freely. Never allow them to flag, nor keep them too wet, and as soon as the roots have filled the pots, shift them into a size larger pot, in which they may remain to flower. At this time they will grow more rapidly, and should be kept

in an airy part of the Greenhouse, or placed in a sheltered situation in the open air, and regularly watered in dry weather. In August they will be coming into flower, and may be placed where they are wanted to bloom. When it is desired to increase them as much as possible, the roots may be separated, and each one planted in a small pot, covering them about half an inch deep, and treating them as before directed, but they flower in more perfection when divided into three or four pieces without separating them.

A. longiflora is a beautiful blue flowering species, and requires the same treatment as *A. coccinea*. There are several new species lately introduced, which are very beautiful, and should be in all collections, where neat and elegant little Plants are desired.

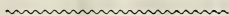
AGAPANTHUS.

AGAPANTHUS OR AFRICAN BLUE LILY is a fine summer flowering Plant suitable to stand on a veranda, and is easy of cultivation. It will thrive in loam with a little decayed manure mixt with it. They require large pots as their roots are large and fleshy, and when growing and flowering it requires a large supply of water. It will keep under the stage of a Greenhouse or in a cellar in winter, and is increased by dividing it at the root.

ALOE.

THE ALOE is a curious genus of Plants that thrives well in a light rich sandy soil with a little lime in it, and requires but little water in winter, but in summer the soil should be kept moist, as the roots of the smaller kinds are tender and fleshy, and are liable to be injured by drought. They thrive well in a warm room as they like a dry atmosphere.

A. VARIAGATA, is a very pretty Plant for rooms and flowers early in the spring. *A. arboria* is a fine Plant for a Conservatory. It requires a large pot and flowers in winter, and is very easy to keep. They are increased by suckers from the root, taken off and planted in separate pots.



AMARYLLIS.

THIS is a very beautiful bulbous genus of Plants exhibiting a great brilliancy of color, and in many kinds, combined with a delightful fragrance. This genus is very extensive, containing thirty genera, and nearly two hundred species for the most part easy of cultivation. The bulbous kinds that lose their leaves in summer, as *A. belladonna*, *johnsonia*, *rutila*, *vittata*, and others of similar habits, require to be kept dry till they begin to grow. When the leaves turn yellow or

die off, they should be repotted and watered sparingly at first, and more plentifully as they advance in growth; and when in flower they may also have water in the pans under the pots. When the flowers are past, they should not be put away, but kept growing by keeping them near the window and regularly supplied with water as often as they get dry, for on the full development of their leaves and ripening of the bulbs after the leaves die off, depend their flowering another season. A shelf in the cellar is a good place for the pots with the bulbs in Summer, as they require nothing more till they begin to grow, though they usually shoot up their flower stems rapidly, and will require to be examined occasionally to see if any show their flower buds, when they should be removed to the light and watered. As soon as they have done flowering they should be repotted: to do which, turn them out of the pots and shake off the old soil and separate the offsets being careful not to bruise their roots. None should be cut off except such as are decayed. Put the old bulb in a pot by itself, and the offsets in another pot. Be careful not to place the bulb in the pot deeper than one-third or half its depth. The soil should be light rich loam and one-third white sand and the rest peat soil or leaf mould well mixt together, and the pots should be well drained.

Those that grow with a large thick neck and keep their leaves all the year round, as the *Crinum*, should be kept in their pots, and may be plunged in the ground during hot weather, and taken up before it gets cold. The plants may be kept in a warm room during winter, and they require a good quantity of

water during the flowering season, and a moderate quantity throughout the year. The kinds that flower in summer, as *Brunsvigia*, *Calostemma*, and *Jacoea* lily, may be planted in the garden in any good sandy soil in spring, and taken up before frost. They should be kept dry during winter, although if kept in pots the year round, they will occasionally flower twice in the year.

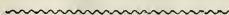
ALSTREMERIA is a tuberous rooted Plant, belonging to the genus *Amaryllis*; they should be grown in sandy loam and thoroughly decayed manure and leaf mould, about equal parts. Before they begin to grow, shake them out of the pots, and if it is desired to increase them, the roots may be divided and planted in pots proportioned to the size of their roots. They should be placed in a warm part of the greenhouse, and be kept a little moist, and as soon as the roots have filled the pots, they should be shifted into larger ones, (always using the same compost) and kept moist, and shaded from the sun and wind, as the leaves are tender and easily get broken, and during their fastest growth, which is in April or May, they will require a good deal of water, and they will soon thrust up strong flower stems, and flower finely. Many kinds will do turned out of the pots in a shady border of the garden in summer, as *A. pulchella*, *hookeri*, and *psittacina*. When they have done flowering and the tops die down, they should be taken up and potted, and kept dry till they begin to grow, which with some kinds, is about the end of November, and with others not till January or February. Persons having no greenhouse, may keep the pots containing them in a cellar till

they perceive them begin to grow, then first shift them into fresh soil and place them in a warm room window and keep them moist, and if they require it, change them into a larger pot and give them a good supply of water, and they will come into flower about the month of May or June.

ANEMONE.

ANEMONES are showy flowering plants, and in Europe are cultivated as florist flowers, as the *Ranunculus* and *Hyacinth*. Anemones are often imported along with the Dutch bulbous flowering roots and are planted in beds, as the *Hyacinth*, in October and November, but the severe frost of the winters in this climate will destroy the roots if they are not well covered with old tanners' bark, leaves or straw, so as to exclude frost from them. The kinds mostly cultivated for the beauty of the flowers, are *A. coronaria*, and *hortensis*, of each species of which there are many varieties, and the prevailing colors are red, white and blue, with double and semi-double flowers. The soil preferred by Anemones is a good fresh loam, not too light or sandy, and they will flower in almost any month in summer, according to the time the roots are kept out of ground and the season when they are replanted. The roots may be planted in April, May and June, and they will flower in succession, planting them about six or eight

inches apart, and covering them about three inches deep. The finer kinds will require protection from violent storms and excessive light and heat, but many varieties will thrive very well in the flower borders in summer, and as soon as the leaves wither in fall, take up the roots and dry and clean them, and put them in paper bags till spring. They are usually increased by dividing the roots, or offsets. The Anemone, like the Ranunculus, is very pretty when grown in flower pots. For this purpose, fill some pots with rich soil in October, and place five or six roots in a pot of nine inches in diameter. Just cover them with soil and place them in the front windows of the greenhouse, keep them rather moist by watering them as often as they become dry, and they will come into flower in March. More roots may be planted in each succeeding month, and they will flower in succession.



ARDISIA.

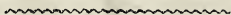
Is a pretty evergreen Plant much admired for its clusters of red berries, which it keeps on nearly all the winter. They are easy Plants to cultivate, growing well in a mixture of loam and peat. They like a warm room in winter, and in summer should be kept in the shade, and the soil kept a little moist. They are generally raised from seed which should be sown in pots, as soon as the berries drop off, and placed near the window.

AZALEA.

THESE are very fine showy Plants, and generally flower early in spring. When in full flower they make a splendid show in a Conservatory, or room window; when they have done flowering about the month of May, fresh pot them in a mixture of good sandy loam and peat or black soil, about equal parts, and add a little decayed leaf mould, and in potting them, be careful to drain the pots well with broken potsherds, for although they delight in moisture, stagnant water frequently proves injurious to them. In the end of May, or beginning of June, place them out in a somewhat shady and sheltered situation in the Garden, where they may remain till near the end of September, but at the approach of frost remove them into the Conservatory or a cool room window, and let them have as much air as convenient in fine weather. In dry weather in summer, they require watering frequently. The Azalea may be made to flower in winter by placing them in an increased temperature to between 60 and 70 deg. of heat, and keeping them moist, and they will generally begin to open their flowers in about a month after being placed in an increased heat. When they are in flower, give them a good supply of water, as it is requisite to enable the Plants to support their flowers, for any deficiency in this respect will speedily cause their flowers to fall. When they have done flowering, allow them to make their young wood, a good supply of which should be secured before they are removed. When they have

grown considerably, remove them to the Greenhouse or a cool room, and treat them as other Greenhouse Plants by giving them water as they require it, and as much air as convenient in mild weather.

Where they are kept cool or in the temperature of a Greenhouse, they usually come into flower in March or April, and as the weather is getting warmer, syringe them occasionally that they may make their new growth by the time for placing them out for summer. They are propagated by taking off cuttings of the young wood as soon as they have completed their growth, before it gets hard. Plant the cuttings in pots of sand, and plunge the pots in a hot bed, and cover them with a Glass, and in a few weeks they will be rooted. When they have struck root, transplant them into separate pots in the same kind of soil as the old Plants, after which plunge them again in the hot bed, till they begin to grow, then remove them into the Greenhouse, and treat them as the other Plants.



CACTUS.

A VERY splendid genus of Plants, easy of cultivation, thriving well in rooms, and not requiring so much care as many other Plants. The kinds most commonly grown are the *Cereus* and *Epiphyllum*, they are usually grown in too poor a soil and kept too dry, but they

require as rich a soil and nearly as much water as other Plants to have them grow and flower well.

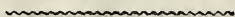
They thrive well in a good sandy loam, and about one-third of decayed manure; a little peat soil may be added, if convenient, and a little old lime mixed with the compost. In potting or shifting, put broken potsherds or gravel at the bottom of the pot, and the best time to do this is as soon as they have done flowering, that the shoots may grow strong for flowering the next season. The *Cereus*, like other plants, requires a good supply of water when flowering and during their growth in summer; when they have completed their growth they will need but little water.

In summer they should be kept in a sheltered situation, not exposed to the full sun, as they are apt to get scorched, nor exposed to heavy rains, for it causes them to get spotted and die; they keep well on a back shelf in a Greenhouse, as they have the heat without much sun, or in an east room window, or in the veranda. They should be kept tied up to the sticks or trellis as they grow, to prevent their getting broke, as they are prickly Plants, and not easy to handle. The *C. speciosissimus*, and other strong growing kinds may have the ends of their young shoots pinched with the thumb and finger, or the tips cut off when they have grown as long as desired; which will stop them from growing longer, and cause the shoots to thicken and form flower buds. This, with cutting out any exhausted stems, and thinning out the shoots when too thick, is all they require. When it is requisite to shift them, a cloth may be wound round them to hold them by, as the thorns are very painful if they get in the fingers.

The *Epiphyllum truncatum* and other small kinds make pretty Plants when grafted on stronger kinds; the *C. triangularis*, is much used for a stock, and requires to be kept warm and a little moist in winter, for, being a tropical plant, if it gets chilled, it is very apt to decay at the roots.

The *C. speciosissimus* makes a good stock, and the time to graft them is from August to October. It is very easy to graft, merely by making an incision in the stock and inserting the scion and making it fast. Cuttings will grow in any season of the year in a Greenhouse; they root very freely if taken from the old Plant in December or January, and laid to dry a few days, then planted in pots in the same kind of soil they are grown in, and placed near the flues, and kept a little moist. Put one cutting in a pot, according to its size, pressing the soil firmly in the pots, and keep it a little moist, and they will root, and very often flower the same spring.

The *E. truncatum*, *violaceum*, and *russellianum*, are pretty Plants for rooms, as they flower in winter.



CALCEOLARIA, (or SLIPPER WORT.)

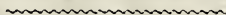
Is a very showy plant of easy cultivation, of which there are many varieties. They grow well in a mixture of light sandy loam, one-third of peat and leaf mould, one-third decayed manure, and some white sand. If the peat is lumpy, it should be rubbed through the hands to break the lumps, which is better

than sifting. When the Plants are in the Conservatory for winter, they should be placed near the windows and in a cool airy part of the house, and kept a little moist, but never saturated, with water. When the roots push through the hole at the bottom of the pot, they should be shifted into the next size pots, being careful to disturb the roots as little as possible, and in a month or so their roots will again make their appearance, and probably their flower buds will be forthcoming; then repot them as before, keep them moist, and let them have as much air as convenient; tie them up to sticks as their branches are easily broken, and they will soon come into flower. They also make pretty plants for turning out of the pots in the flower garden, and flower most of the summer. They are easily raised in the early part of the spring by slipping off some young shoots and planting them in pots filled with soft sandy soil, placed in a shady part of the house and kept a little moist, but if placed in a hot bed that is not very strong, they will root in a few weeks.

The *Calceolaria* is very apt to die off suddenly in hot weather, therefore it is necessary to plant slips frequently to preserve them, as they root easily in Summer. The Herbaceous kinds are usually raised from seed, which should be sown early in Spring and planted out on a moist piece of ground to grow in Summer, and taken up and potted before frost. In rooms, the plants should be placed in a cool window, where it will not freeze, and kept a little moist, and in February shift them into a size larger pot, placed in a warm room, and they will come into flower early in Spring.

CALLA ÆTHIOPIA.

Is a well known plant, and very easy to keep, and when in flower, with its large white fragrant blossom, which is often produced in the middle of winter, is very beautiful. When the Calla has done growing in summer, the leaves should be suffered to die by withholding water from them, which will ripen their bulbs and cause them to flower. In August shake them out of the pots and remove the old soil, and if it is desired to increase them, break off the little pseudo-bulbs at the roots, and plant them in a pot by themselves, then repot them in any good rich soil, and as soon as they appear above it, give them water freely.



CAMELLIA JAPONICA.

THE Camellia is a very splendid plant, and generally considered the finest exotic plant in the Greenhouse, and although it has been introduced some time in the country, and many fine Hybrids have been raised in the United States, its management is not generally understood, except by cultivators and persons having large Greenhouses. Many persons are deterred from having them in their rooms and small Conservatories, as they consider them difficult to manage, and the chief complaint is of their dropping their buds

before flowering, although that can in a great measure be prevented, by attending to the following directions. The chief points are to protect it from the sun in Summer, to prevent the roots from matting around the sides of the pot, and not to give them too much water when they are not growing.

When the Plants are placed in the Conservatory in the Fall, they should be shaded from the sun at noon-day during the months of September and October, and also in the Spring, during the months of April and May, for if exposed to the full sun, their leaves are apt to turn yellow, and the Plants get sickly, and when placed out of the house for Summer, they should be put in a shady situation, where if they have any sun, it should be but little, and that early in the morning.

When Camellias are flowering, and during their growth, they should be watered pretty freely, but not kept saturated, nor should they be suffered to become very dry before water is given them. In Summer they should be kept moist and watered over their leaves in the evening, which is very beneficial to them, and during winter, it is best to keep them rather dry.

As regards the temperature, if it is desired only to flower them at the natural time in the Spring months, they should be kept as cool as possible during winter, for as the heat comes on more gradually there is less danger of the Buds dropping off, which is caused by a too sudden change of temperature. It is astonishing how very easily the flower buds, when nearly ready to expand, are acted upon by either heat or cold; the variation of only a few degrees will considerably affect them, therefore it is necessary to pay attention to them

at this time. Keep them as regular as possible in temperature and moisture, in order to ensure their bloom. Previous to taking Camellias from the Greenhouse into a warm room, water them freely over their leaves (if the flowers are not expanded) and they will come into flower much better than if taken in without watering.

The Camellia is a plant that is well adapted to flower during the winter months, when but few Plants cheer us with their expanded blossoms. They should be placed in the Conservatory early in the Fall before the weather gets very cold, and by keeping the temperature as regular as possible between 50 and 60 deg. of heat, (about 50 to 55 deg. by night and 55 to 60 deg. by day,) and keeping them regularly moist, and giving them air in mild weather, they will come into flower early, and provided they are good sized Plants and well budded, they will flower a great part of the winter. It may be well to remark that Camellias are very full of buds, and will naturally drop some of them of their own accord, when they have more on them than the sap can supply, and therefore amateurs should not feel disappointed if they lose some of them. As soon as they have done flowering, which will be according as they flower early or late, from February to April, before the new shoots commence growing, they should be repotted in fresh soil, and kept in the same heat as before, or the heat may be raised from 55 to 60 deg. by night, and 60 to 65 deg. by day. Syringe over their leaves early in the morning, and keep the soil in the pots moist, and shade them from the hot sun, giving them as much air as the weather

will admit of, which will cause them to grow regularly, and they usually complete their growth in about a fortnight. When the young shoots have done growing, which can be easily perceived by the terminal bud at the point of the shoot, the heat may be raised to 70 deg., as the increased heat will cause the plants to form their flower buds with more facility and in greater quantities; but it should be observed that this increase of heat must be applied immediately on the plants perfecting their growth before the wood becomes hard, or it will not have the desired effect; for such plants as form their flower buds in the conservatory previous to placing them out for summer, can be brought to flower much earlier in the winter or by the end of November, and any that have not formed their buds in the spring, will form them in summer and come on in succession.

The soil for Camellias should be a mixture of loam and peat with some decayed manure and sand, so that it will be of a sufficient texture not to dry too rapidly, nor bake too hard in the pots, for when potted into too hard a soil or peat alone, it forms an impenetrable ball, and being impervious to water which when given them runs down the sides of the pot without watering their roots, the plant will be impoverished, and the leaves drop off although apparently green and healthy, and the death of the plant soon follows. The best soil is one-third of good peat and one-third of loam, and nearly one-third of decayed manure, and the remainder fine sand. In shifting them, let the pots be proportioned to the size of the plant and the quantity of roots. They may not always require a larger pot, but

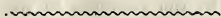
let them be taken out of the pots, a little of the soil removed from the sides, top and bottom of the ball and the ball loosened a little, but no roots should be taken away, unless they are dead. The pots should always be well drained with broken potsherds or gravel, then place a little soil over the drainage, and return the plant and fill up the pot with the compost, pressing it down the sides with the finger or a piece of flat stick, leaving a little space between the soil and rim of the pot, to allow of watering. When Camellias are inclined to grow too straggling and tall, they should be pruned, the side shoots cut back, and the leader or top shoot shortened so as to reduce them to regular shape, which should be done as soon as they have done flowering. When they have completely set their flower buds, or by the beginning or middle of June they will be sufficiently hardy to place out for summer; precaution is necessary to prevent worms from getting an entrance into the pot by placing a piece of board under it, but if any do find their way, they should be taken out, or the pots watered with lime water once a week for two or three weeks, which will cause them to come out, but be careful not to give them too much lime water as it may injure their roots. As long as the weather continues favorable, that is, without frost or excessive rains, they need not be taken in till the latter end of September or the beginning of October. Previous to taking them into the house, it may be necessary to take off a little of the old soil from the surface of the pot, but not deep enough to injure their roots, and topdress them with a little fresh compost, which will be very beneficial

to them, syringe them over their leaves and wash the pots clean, and keep them in a cool situation, till they are required to flower. When placed out for Summer, they should be put in as cool and shady a situation as possible, for if much exposed to the sun they will turn yellow and get sickly. The pots may be plunged about half their depth in the ground, provided the soil is dryish sandy loam; if it is a wet cold soil, it is a good plan to take a box and bore a few holes in the bottom to let water out, and set it on the ground, and place in the pots and fill in the interior with sand, as it will protect the roots from being injured by drouth, and they will not want watering so frequently.

Camellias to be cultivated or flowered in rooms, should be of good size, and strong healthy Plants, for small Plants are not suitable, as they are more liable to be affected by the heat of the room than larger ones, and the pots being so small they dry much faster, and are apt to lose their buds. When they are brought in from the Garden in Fall, and it is desired to have them flower as early in the winter as possible, they may be placed in the room they are to flower in, and if the windows are much exposed to the sun's rays they should be shaded a little; and they will come into flower according to the state of the Plants, and the forwardness of the buds. If it is only wished to have them flower in the Spring, they may be placed in a cool room where they will not freeze, and they will bear a darker room, than most other Plants, and can be brought into the parlor when they are wanted, and with the same attention they will soon come into

flower. As in rooms there is not the same convenience for potting or shifting them as in a Conservatory, they may be kept in such rooms till the season arrives for placing them out for Summer, when they can be fresh potted if they require it, and they will perfect their flower buds by Autumn.

Camellias are increased by grafting them on stocks of the single red, the cuttings of which may be taken off the mother Plant, any season after the wood of the previous growth is ripe, and planted in pots of white sand, which should be well drained, and two or three leaves left on each cutting. Place them in a shady part of the Greenhouse, for five or six weeks, and then plunge them up to their rims in a hot bed, and when rooted, they should be separated into small pots, and keep them shaded when first potted, then nursed along till of fit size to graft.

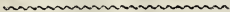


CAMPANULA PYRAMIDALIS.

THIS is a well known plant with its tall pyramid of blue flowers, and is considered one of the greatest ornaments in a conservatory and one that will amply repay for its attendance by the brilliancy of its colors, and the length of time it continues in flower; in the spring, the seed should be sown early, and placed on a shelf in a conservatory or room window, and kept a little moist, and when the plants are large enough to

sprout, they should be potted off into small pots and kept in the house till frost is over, or they may be raised by cuttings taken off old plants in March. Put one cutting in a small pot and keep it in a shady part of the conservatory till rooted, then treat them as follows, viz: as soon as the frost is over, manure and dig up a piece of ground in a moist shady part of the garden, and set out the plants without disturbing their balls, about a foot or 18 inches apart, and keep them clean of weeds, and water them in dry weather, and occasionally give them some manure water to encourage their growth, because the larger the plants grow, the stronger will be their flower stems, and in the month of October take up the plants with good balls of earth to their roots and put them into pots from 6 to 12 inches in diameter, or according to the size of the plant—the soil most suitable for them is good rich loam and decayed manure well mixt together, as they are not only aided in strength, but also in brilliancy of color by the richness of the compost they grow in—then place them in a cool shady part of the conservatory, exposed however to as much light and air as possible, but where there is not the convenience of a Greenhouse the windows of a Dwelling-house will answer very well; keep them a little moist through winter, and occasionally turn round the pots that the plants may grow regularly, and when any begin to shoot up their flower stems, they should be shifted into larger pots, using the same kind of soil as before, and keep them moist and give them manure water frequently. Those that do not show signs of flowering, may be planted out as in the preceding

summer and will be stronger plants, and flower finer than those of the first summer. An amateur wishing to produce a good show plant could not exhibit one of more striking appearance than a *Campanula*, which when treated as above will often grow five or six feet in height if well managed. When the climate is mild enough for them to live through winter, they need not be taken up in fall, but in spring if wanted to flower in pots, or they may be transplanted into the flower borders. A bed of *Campanulas* and *Lobelia cardinalis* makes a fine show together when in flower, by the contrast of their colors.



CARNATION.

ALMOST all the varieties of this genus, are in high estimation, for the peculiar beauty of their flowers, and for their delightful fragrance. On account of the variation of these flowers, they are divided by florists into the following classes.

1st. *Bizarres*, (from the French, signifying irregular or odd,) which consist of those flowers which are striped with irregular spots or stripes, having two colors, on a white ground.

2nd. *Flakes*—such as have only one color, on a ground, being in large stripes, going quite through the petals.

3rd. *Picotees* — such as have a fringed edge, usually a white or yellow ground, spotted or pounced, with scarlet, red, purple or other colors.

The Carnation is a Plant that is easy of cultivation, growing in any good garden soil, but from the severity of this climate, in winter, they require protection, either in a Greenhouse or cold frame.

These flowers are usually propagated by Layers, which should be performed as soon as the flowers begin to fade, or the shoots are long enough for the purpose, in the following manner. Prepare the Layers by cutting off their lower leaves, next stir up the earth around the plants, and lay about an inch of fresh soil, then make an incision with a sharp pen knife, by entering about a quarter of an inch below a joint, and passing the blade of the knife up through the center of it, and continue to one-half or three-quarters of an inch above it, then cut off the portion of the stem left below the joint close to it, and this part of the operation is completed. The incision being thus made, the layer must be gently pressed into the soil, and secured by a peg at not less than an inch nor more than an inch and a half below the surface; raise the end of each Layer, as upright as possible, but do not trim the leaves, as it retards their rooting, and give them a watering, which may be repeated as the weather may render it necessary, and they will be rooted and ready to pot off in six weeks. The slip or tongue recommended to be made is requisite, to intercept the downward flow of the pulp, and cause it to form root fibres. When they have struck root, or by the end of September, cut them from the parent plant, with about

an inch of the stalk below the incision attached, and plant them in small pots, filled with good loam, and a little decayed manure, or leaf mould. When potted, place them in a sheltered situation till the middle of October, at which time they should be removed into the Greenhouse, or Frame for the winter.

Where a quantity of plants are required for the garden, the Layers can be planted in boxes, twenty or more in a box, and be protected by a spare hot-bed frame, placed on the ground in a warm situation facing the south, then dig out as much of the earth from inside the frame as will prevent the plants from touching the Glass, and place the earth dug out around the outside of the frame nearly as high as the top of it, beating it well down, so as to exclude the frost.

Previous to placing the boxes in the frame, lay two or three inches of coal ashes on the surface, which prevents worms from penetrating, and allows the water to drain away. Put on the glass sash and shade them from the sun a few days, until they are recovered from transplanting, then begin gradually to give them air, and increase it till dry warm weather, when the lights may be entirely taken off. Take care to close them down again in the evening, and preserve them at all times from excess of wet, or mildew will infest the plants, which should be wiped off when it appears, or the diseased Plants removed, and all decayed leaves picked off, and give a little water to those that appear dry; follow this mode of treatment till the winter sets in, then shut the sash down close, and cover them with mats or straw and boards, then let them remain as long as the severe weather lasts, but when the wea-

ther changes, and the days lengthen, give air as before until the beginning of April, and a week or two before finally removing them, give full air night and day. When in pots, and placed in a Greenhouse, they will only require the ordinary treatment of Greenhouse plants. If it is desired to have them flower in pots, they should be shifted in March or April, into pots nine inches in diameter, in the following compost, two parts of good fresh loam, one part decayed manure, and the rest of coarse sand, (and if convenient leaf mould may be used,) mixed well together, give them a little water, and as soon as frost is over, plunge the pots in the ground where they are intended to grow till in flower, the rims being just level with the surface of the ground, place neat sticks in the pots and tie up the flower stems, as they advance in growth, and water them in dry weather. When the flower buds begin to open, the pots can be lifted and removed where they are wanted to bloom, and if they are placed on the Veranda, where they are partially shaded, their flowers will last much longer, and be finer colored, than if exposed to the full sun.

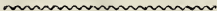
Those Carnations that have very double flowers, and are inclined to burst on one side, should have the Calyx or flower pod tied neatly with a piece of twine, and the opposite divisions of the Calyx parted with a sharp penknife, that the flowers may expand regularly.



CINERARIA, (THE CAPE ASTER.)

MANY new varieties of this Plant, are now in cultivation, that are very showy, and flower during the winter and spring, where they form a pleasing variety amongst other plants in the windows or Greenhouse, and are easily cultivated as follows.

As soon as they have done flowering, cut off the flower stems and dead leaves, and in spring plant them out in the ground or a shady situation for summer, in August take them up, and divide their roots, and pot them in good soil, (a mixture of peat and loam is most suitable for them,) and place them in a sheltered situation, or in a frame until the approach of frost, then remove them into the Greenhouse or room windows, keep the soil in the pots moist, and they will bloom nearly all winter and spring. The most showy kinds, are *C. waterhousiana*, *C. kingii*, and *C. pulchella*.



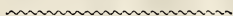
COMMÆLINA CÆLESTIS, (OR TUBEROSA.)

Is a beautiful Plant, with small tuberous roots, thriving very well in the open borders, and displaying a succession of delicate azure flowers, from June till October.

It may be raised from seed sown in April, in any tolerably rich moist soil, and will flower the same

summer, and produce good roots by the autumn. The frost will kill the stems, which should then be cut off, and the roots dug up, and placed in a flower pot or box, with some earth about them, and put under the stage of the Greenhouse, or in a cellar. They should be kept in a moist state, and to secure them in this condition be sprinkled occasionally, from the nose of a water pot, if they are not damp enough without it. Their nature is so succulent that they will, if kept dry, shrivel and become exhausted, and if suffered to remain in a half dried state, they will become mouldy and rotten. In April or May they should be planted in the flower Garden, when they will be much finer and stronger than they were in the previous year. By continuing to grow and preserve them in this manner, they will improve in each succeeding year, and increase by offsets, as other tuberous roots.

The bulbs of Tigridia, Pavonia, and Conchiflora, can be preserved in the same manner.



CHRYSANTHEMUM INDICUM.

THE Chrysanthemums are well known Autumn flowering herbaceous plants, originally from China. Since their introduction here many fine varieties have been raised from seed, which are superior to the originals, and as they are the last of the Autumnal flowers, and easy to cultivate, they ought to be more appreciated than they usually are.

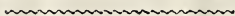
CULTIVATION—They are propagated by cuttings or dividing their roots, (*see Perennial Plants.*) The soil most suitable for them is a light rich loam, and decayed manure, in the proportion of two parts of the former to one of the latter.

They may be either grown in pots through the Summer or planted in the ground, and taken up and potted in September. When grown in pots they will require to be shifted two or three times during their growth, and by the end of August they should be shifted into the pots they are to remain in to flower. They require at all times during their growth a good supply of water, and in Summer when the weather is dry, they are much benefited by being watered over their leaves. In August begin to water those in pots with soap suds, or manure water once a week, and continue this until they come into flower, which will be in November.

If planted in the ground, they should have an open situation, and be allowed sufficient room, so as not to interfere with each other while growing, and be tied up to sticks as they advance in growth. In September they should be taken up with balls of earth to their roots, and put into pots from nine inches to a foot in diameter ; being governed by the size of the Plants.

Place them in a shady situation until recovered, and remove them into the Greenhouse before frost ; supply them well with water while they are in flower, and when they have done flowering, cut off the stems to within a few inches of the pot, and set them in a situation where they will not be injured by frost. An

occasional watering will be all the care they will require until the season again commences for propagation.



DAHLIA.

THE Dahlia is certainly one of the most splendid Plants in cultivation, for whether the brilliancy and variety of colors in the flowers, the extent of its varieties, the duration of its blooming, or its fine appearance when in perfection be considered, it stands in each particular unrivaled, and merits a situation in every Garden, and it is an additional recommendation, that it is easy of propagation, and cultivation.

PROPAGATION.—Where a quantity of Plants required, a hot bed should be made about the middle of March, and the tubers planted in the bed in sandy soil, and just covered. They will require no water, as it is very apt to cause them to rot. As soon as the shoots are about three or four inches high, proceed to propagate them, by taking off each shoot, holding it near the base by the thumb and finger, and by a slight motion of the hand to and fro, it will be detached from the crown of the root, and if adroitly performed, the base of the shoot will present a convex surface, surrounded by one or more incipient buds. Plants raised by this mode, not only produce the finest flowers, but

the crowns invariably break the following spring, which is not always the case with plants, raised from cuttings, in the ordinary manner. Plant each shoot in a small pot, and place them in a frame where there is a gentle heat, until they are rooted, which will be in a fortnight or three weeks ; shade them from the sun, give a little air every day, and water them when they are dry. When they are rooted, they may be removed to the Greenhouse, or cold frame, and so kept until the middle of May, when they may be planted out where they are to flower.

Where the object is to have strong plants, rather than a quantity of them, as soon as the shoots have grown from six to eight inches high, take them out of the bed, and divide the roots by splitting through the old stem, preserving a tuber to each shoot, and if it is too early to plant them in the Garden, put each shoot in a pot according to the size of the tuber, and place them where they can be protected till the season arrives.

Where a hot bed is not convenient, the roots may be divided, with a part of the old stalk attached to each root, and planted at once in the garden, and if the soil is dry sandy loam, this may be done by the middle of April, if a clayey or wet soil, in May, planting them about four inches deep.

SOIL.—The Dahlia will grow in almost any kind of soil, but one of medium quality is best, neither too poor nor too rich. Dig holes about a spade deep, put in a shovel full of decayed manure or compost, with the root, and fill up the hole with the soil dug out,

press it gently with the foot, and level it; they should be planted moderately deep, for fear of a dry summer. Where Dahlias are grown successively on the same soil, they soon deteriorate and produce inferior flowers, or (as it is termed,) run out. Many kinds that have been grown on a sandy soil several years, will improve by being planted in a good loam, and vice versa.

CULTURE.—As the Dahlias advance in growth, a strong stake should be placed to each plant, and the lateral branches should all be trimmed off to a certain height from the ground, in proportion to the growth of the plant, — say for dwarfs, 12 inches, increasing to 18 or 20 inches for the tallest. As the upper branches get long, and the main stem increases, let them be well secured to the stake. A very good way is to put three stakes in a triangular form, and tie a cord or hoop round the stakes, about a foot apart, thus forming a stand, which makes them very secure from wind. A little attention will be required to keep the branches tied to the stakes, as they advance in growth; and to have Dahlias produce fine flowers, they should be kept thin of buds and shoots. Keeping them clean of weeds, and occasionally stirring the soil, and in dry weather, giving them a good watering at the root, is all that they require.

PRESERVING THE ROOTS.—When the frost has destroyed the Plant, the stems should be left standing a week or two, to ripen the roots, for if cut off soon after the frost has nipped them, they are apt to sprout again.

About the middle or end of October, is the proper time to take up the roots, which should be done on a dry day; clear off the earth and put them in some place secure from frost, or they keep very well under the stage of a Greenhouse, without further trouble.

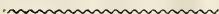
When laid by in cellars, they require to be kept from damp and heat. If the cellar is wet, they will keep set upon the top of the potato bin, or on a shelf.



ERYTHRINA CRISTA GALLI,

Is a fine plant for flowering in the Garden, or to flower in a pot on the veranda in summer, where with its green laurel leaves and crimson flowers it makes a fine show. If designed for the Garden, they only require to be set out in a good rich soil about the middle of May, and in fall, after the frost has stopt the growth, the shoots should be pruned, to within a few inches off the main stem, then take them up, and place their roots in a pot of earth, and lay them in the cellar till spring. If it is desired to grow them in pots, repot them in good soil, with a little decayed manure, early in April, and place them in a warm situation, in the Conservatory, keeping them a little moist; and when the shoots have grown 6 or 8 inches, water them frequently till they come into flower, which is usually in July. As soon as the flowers are over, cut back the shoots, and top dress them with a little fresh soil, keep

them moist, and they will again flower in October or November. When placed in the Greenhouse, they make a fine appearance among the other plants. After they have done flowering the second time, cut them down, and put them in a Greenhouse or cellar, allowing them little or no water till spring.



FUCHSIA, OR EAR DROP.

THIS is a very beautiful genus of Plants. With their pendulous corols they make a very graceful appearance, and are easy to cultivate. In winter they may be kept rather dry; towards spring, repot them in the following compost; one-third of good loam, one third of peat or live mould, and one-third of decayed manure, well mixed together, and if the loam or peat is heavy, some sand may be added, as the Fuchsia likes a loose rich soil, that its roots can extend freely in. As soon as potted, place them to the light, in about 60 deg. of heat, and keep them moist, they will soon begin to grow, and if they throw up strong shoots from the roots, cut the old stem down to the pot, (except they are trained to a head,) then cut out the suckers, as young vigorous shoots from the roots will produce finer flowers than those from the old stem; water them freely, and let them have as much air in fine weather as possible. Keep the heat from 55 to 60 deg. by night, and from 65 to 70 deg. by day, and they

will grow very vigorously, but you should thin out the shoots to 3 or 4 of the strongest, and keep them tied up, as they grow, to prevent their getting broken, and they will soon show their flower buds, and flower finely. The natural habit of the Fuchsia, renders it a fine plant to train a single stem, as this allows them to form a bushy pyramidal head, and as their corol flowers are produced at the points of the branches, which are bent by the weight of the flowers into a graceful and elegant arch, it gives them when in flower a beautiful and picturesque effect far surpassing the ordinary way of tying them up in a bush. Now in training them, take care to select a good strong young shoot, and cut off the lower branches close to the stem of the plant, leaving about one-third of the whole length of the stem covered with branches and leaves, and as the plant increases in height, so in exact proportion, remove the lower branches till they have obtained the desired altitude, which will be according to the kinds; the *F. virgata*, and other strong kinds, may be grown to the height of 3 to 5 feet, the *F. microphylla*, and *F. globosa*, when trained from one to two feet high, make elegant plants for a window; *F. venus-vitrix*, and *rosa-alba* resemble the *F. globosa*, or *microphylla*, in habit, but as they are smaller plants, should be placed in a hot-bed in spring, and they will grow more vigorously. The *F. fulgens* and *F. corymbiflora*, are strong growing kinds, and require a large pot, but when well grown, make very fine plants to stand on a veranda in summer, as they flower a long time. The *F. fulgens* should be pruned no further than as the young shoots die down, as the flower buds

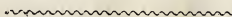
appear as soon as the young shoots have grown a few inches in spring, and they come early into flower, when they show their blossoms to better advantage, as the foliage is delicate. The Fuchsia is a fine plant for the flower Garden, and when planted in a bed, (the tall growing ones in the centre, and the small ones in front,) makes a very pretty appearance, when in flower.—When they are planted out in the Garden, they should be taken up before much frost and put in as small pots as the roots can be conveniently got into, and shaded from the sun till they are recovered; and if they shed their leaves clean them off, trim the straggling branches, and place them in the Greenhouse where they are to remain till spring. When they are grown in rooms, they will often, if the room is warm, grow early in spring, and should be placed close to the windows and watered freely, and they will be in flower by the end of March or April. As soon as the flowers are over and the season arrives for placing them out, they should be repotted, and the pots plunged in flower beds, and they will flower all the latter part of summer. If they are lifted out, and placed in the house windows, before the frost touches them, they will flower during the Fall, and when they have done flowering and the leaves drop off, give them but little water. The Fuchsia is easily raised by taking off the young shoots in spring, when they have grown 3 or 4 inches long, and planting them in a pot of sandy soil, and covering them with a glass. If placed in a hot bed or a room window, in about 60 deg. of temperature, shaded from the sun, and the soil kept a little moist, they will soon root.

GARDENIA, (OR CAPE JASMINE.)

Is a splendid plant, and is much admired for the delightful fragrance of its fine white flowers. It is easy to keep, and not so liable to be injured by too much water as many other plants. The Gardenia likes a good rich moist soil, a mixture of peat and good loam, and decayed vegetable mould, about equal parts, and a little sand may be added, if necessary to lighten it. The best time to shift the Cape Jasmine is in summer, soon after it has done flowering, and when shifted it should be placed in the shade and the soil kept moist. In winter, if it is kept in the temperature of a Greenhouse, it should be placed in the shade, and kept rather dry, for if it gets chilled by being too wet and cold, its leaves are apt to turn yellow. If placed in a conservatory or warm room, it requires to be kept moderately moist, and as the weather gets warm, it should be syringed over its leaves, and in hot weather watered freely, and they will soon come into flower. If placed in the shade the flowers will continue much longer, as the sun scorches them and they turn yellow, and soon fade. When set out in the Garden, they should be in a shady place, and watered freely in hot weather, and be taken into the house before frost. When the plants are of a suitable size, they will be much forwarded and encouraged in their growth, by being placed in a hot bed, early in spring, (in the heat of 70 or 80 deg.) but the pots should not be plunged in the bed. Water them freely, syringe their leaves, and shade them from the noon day sun ; they will produce

their flowers in greater quantity, particularly the *G. radicans*, and *G. floribunda*. When in flower, they may be taken into the house, and as soon as they have done flowering, be repotted, and placed in a shady situation for summer.

They are easily propagated by taking cuttings of the young or half ripened shoots, when they have done flowering or in spring, before they begin to grow, and planting them in pots of fine sand: plunge the pots in a hot bed, keep them moist, and when rooted, pot them off in small pots, which place in the bed and shade till they have got well rooted; then treat them as old plants.



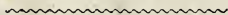
ERICA, (OR HEATH.)

THE Heaths are very pretty plants with little tubular bell shaped flowers, of peculiar beauty and delicacy. In this climate they are much affected by the heat of the summer, and sudden change of temperature, which prevents their cultivation being general. The most robust kinds are pretty plants for the Greenhouse, where they usually flower in winter, or early in spring, but in warm close rooms they will not thrive long, as fire heat is very injurious to them.

When Heaths are in the Greenhouse, they should be kept in a cool airy part of it, and in winter, be sparingly watered till they are in flower, when they should be watered more freely.

In summer they should be placed in any open part of the Garden, and the pots plunged in the ground to prevent the sun from scorching their roots, and repotted whenever their roots become much matted round the sides of the pot. The soil most suitable for them is good black peat, and sandy loam. They are apt to be troubled with the scaly insect, which should be brushed or rubbed off with a flat stick, and the plants washed with soapy water, and then syringed with clean water. Young plants may be grown to a good size by planting them out of their pots in the spring, in a bed of sandy loam and peat, and as their roots are very fibrous, they can be taken up with good balls and potted before frost, and placed in the Greenhouse.

They are propagated by taking off young cuttings and planting them in pots filled with sand and covered with a glass, which should be placed on the front shelf of the Greenhouse, and shaded from the sun. Keep the sand a little moist, and when the plants are rooted, they may be potted in small pots, and treated as old plants.



HELIOTROPIUM, (PERUVIANUM AND CORYMBOSUM.)

THE Heliotrope is a fine plant, much admired for its fragrance, and being a native of Peru, it requires a strong heat to flower freely, which makes it a desirable plant for warm rooms, and if sufficient attention is given to it, it will flower nearly all the year round,

although like many of the Greenhouse plants it requires an annual propagation.

To raise this fragrant exotic, cuttings should be taken from the parent plant early in spring. This is done by taking off young shoots when a few inches long, and planting them in pots, filled with sandy soil, which should be placed in a hot bed, or a cucumber frame. Keep them a little moist, and shade them from the sun; remove all decayed leaves, or they will injure the cuttings. In three or four weeks, the cuttings will have rooted and may be taken out of the frame, and placed in the Greenhouse for a few days to harden, previous to potting them off.

Such as are intended to be kept in pots should be potted off into small pots, using for their soil a compost of sandy loam, and decayed manure or leaf mould, in equal portions. Shake them out of the cutting pot, and allow as much soil to adhere to their roots as possible, plant them singly in the small pots, cover their roots about half an inch deep, pinch off the tops of the plants to cause them to grow bushy, and after giving them a watering, place them in a shady part of the Greenhouse till they have taken root; then remove them into a more exposed situation, and give them plenty of air and water. Due attention must be paid to shifting them into larger pots as often as their roots become matted round the sides of the pot, or the plants will soon assume a sickly hue. When in bloom, remove them where they are wanted to flower, and if watered freely in dry weather they will flower the whole summer. When they have done flowering, cut them down to within a few inches of the pot,

reduce their balls, and repot them in fresh soil ; place them in the Greenhouse, or warm room window, and they will soon grow out, and flower in winter. In the spring following, take off some cuttings to raise new plants from.

If a succession of flowering plants through the autumn and winter months is wanted, more cuttings should be put in during June, August and September. At these seasons, they will strike root without being put in a hot bed, if planted in pots of soil covered with a glass, and placed in a shady situation. When rooted, they should be potted off and treated as before directed, as young plants are to be preferred for flowering in pots.

Those intended for the flower Garden may be planted out by the middle of May, but should cold nights happen (which is sometimes the case) after your plants are set out, they must be protected by covering them with mats, and they will soon grow and flower freely.

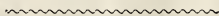


HYDRANGEA HORTENSIS.

THE Hydrangea is a fine plant, and being very easy of cultivation, is frequently seen in a large pot, with perhaps a dozen heads of its magnificent flowers, where they make a fine appearance all the summer, but they should be shaded from the midday sun, or they will soon fade.

They propagate very easily by taking off the young shoots, at any time in summer. August is a good time for taking the cuttings off, when five or six inches long, and planting them in pots filled with sandy soil; place them in a shady situation, either covered with a glass or not. If kept moist they will all take root, and may be kept in the cutting pot all the winter. Early in spring they should be separated, and put in small pots, in which many of them will flower the same summer.

The Hydrangea likes a rich soil, a mixture of good loam and manure, and should be repotted early in the spring, before they begin to grow, and freely watered in summer, while growing, and after they have done flowering, they should be exposed to the sun during the autumnal months to ripen the wood, previous to placing them in the cellar for the winter. Here they will keep as well as in a Greenhouse, if supplied with a little water. When it is desired to have the flowers of a blue color, this may be obtained by potting them in a peat or black soil, or by mixing pounded alum with the soil, in the proportion of an ounce of the former to a quart of the latter.



HYACINTH.

THE Hyacinth is a native of the Levant, and is said to be abundant about Aleppo and Bagdad. It has been cultivated for several centuries in Holland, from whence they are annually imported. The varieties are very numerous, and all very beautiful.

To cultivate Hyacinths successfully, the following rules will be useful.

Hyacinths will grow in almost any soil provided it be light and dry, for although they require a good deal of water during their growth, yet if the soil be retentive of water the bulbs will decay, and if the soil is not naturally sandy, a good quantity of sand should be mixed with it, but in preparing the beds, sea sand is preferable to any other, if it can be procured.

The beds on which the bulbs are to be planted should be made about four feet wide, and dug a full spade deep ; and about two or three inches of decayed cattle manure laid at the bottom of the trench, but not mixed with the soil, for if the bulbs come in contact with it, it causes them to decay.

Always make the bed by the middle of October, which will be about a fortnight before the time of planting : this gives it time to settle properly.

TIME OF PLANTING.—The best time for planting Hyacinths is the beginning of November, for if planted too early, the leaves will appear above the ground before winter, and they are liable to be injured by frost and wet ; and if kept too long out of the ground, the bulbs will be weakened by their tendency to vegetate.

CHOICE OF BULBS.—The bulbs most likely to flower best, are those of a middle size, solid and conical. All flat crowned ones are apt to break into offsets, and at best produce very poor flowers.

MANNER OF PLANTING.—The bed having well settled, prepare to plant by raking the surface level, and mark out the rows on the bed, either lengthwise or across, eight inches apart, which can be easily done by means of a line or rod, and draw drills either with a hoe or spade, about four inches deep, beginning in the center of the bed. Mark the exact part for each bulb in the row eight inches apart, and lay in each marked spot a small quantity of sand for the bulbs to rest upon. This being done, select the bulbs, and place them in the situations appointed for them; carefully avoiding two of the same color succeeding each other; then place a little more sand around and upon each bulb so as to cover it. Return the soil over the row, proceed with the next, placing the bulbs at similar distances, but so that they shall form triangles with those in the adjoining rows; and when the whole is planted, smooth the surface, and the business is completed.

The bulbs that are usually imported from Holland, seldom flower more than one or two years; for at the second year they break into offsets, which require two or three years growth to arrive at sufficient size for flowering again.

PROTECTING THE BEDS.—In exposed situations, the beds may be covered with a little straw or other covering as soon as planted, to preserve the bulbs from frost, and they may remain covered till the spring, when they should be exposed to the influence of the sun and air, or they will grow weakly.

By the end of April or beginning of May the flowers will begin to show their colors, and in order to

preserve them in beauty as long as possible, they should be shaded, or some of the finer colored sorts will soon fade. This is best done by a frame work and awning which should extend over the walks round the bed, and be about seven feet high, to allow of walking under it to view the flowers.

When the flower stems have grown about four inches high, it will be necessary to tie them to neat sticks, or they are liable to be broken by the wind.

Unless the season be excessively dry, watering is always unnecessary, for the dews and rains which fall upon the beds are usually more than sufficient ; and after the flowers fade, and the foliage begins to die, moisture becomes injurious.

When the leaves are somewhat withered, proceed to take up the bulbs, but carefully avoid cutting the leaves until they are perfectly dead, for if the tops be cut off, canker and decay are the consequence.

When they are taken up, draw a shallow drill on one end of the bed, and lay the bulbs in it, so as not to touch each other, and cover them with dry sand ; leaving the dying leaves outside ; there let them remain until the roots are perfectly ripe, which will be known by their leaves being entirely dead. Now take them up, and cut off the leaves quite close to the bulb, (taking care not to injure the crown or top of the bulb,) rub off the dead fibres, and spread the bulbs in a dry airy room, for a few days, then clean off all soil and loose skins that may adhere to them, separate the offsets, and put them in paper bags until the time of planting again.

FORCING.—The bulbs of Hyacinths are weakened by forcing, but they usually produce the finest offsets, which when judiciously treated will soon flower very finely. There are two ways of growing them in houses, either in pots or glasses.

GROWING IN POTS.—It is usual to plant the bulbs in small pots, one bulb in each ; but they flower better, and make more show by planting six or eight bulbs in one pot of nine inches diameter. Fill each pot with light rich sandy soil, and plant the bulbs so shallow that nearly half the bulb shall stand above the soil ; and if they are intended to flower in winter, place the pots containing the bulbs on the floor of the cellar, or under the front stage of the Greenhouse ; keep the soil a little moist, and when they have filled the pots with roots, and the leaves are up, with the flower buds appearing in the centre, remove them to a warm room window, where they can receive the benefit of the sun, and water them freely, during the whole time of flowering ; but as soon as the flowers fade, and the leaves begin to decay, cease, by degrees, to water them.

Some of the pots planted with the bulbs may be plunged in the ground in a warm sheltered situation, covered from four to six inches deep, with soil, there to remain till Spring, when they can be taken up as they are wanted to be brought into flower, and set in a Greenhouse or a room window. Treat them as before directed, and they will flower freely in succession.

GROWING IN GLASSES.—The best kind of Glasses for the purpose are those of a dark green color, as

the roots of the bulbs are not so liable to be injured as in lighter colored ones, but with care either kind will do.

Place the Glasses in a light airy situation, and change the water once in two or three days. If they grow up weakly, it will be necessary to support the stems with sticks, (split at the bottom so as to fit the edge of the glass,) to which the stem should be tied. When out of flower, plant them in pots of soil, to perfect their leaves; place them in a situation where they will receive a gentle warmth, water them as they require it until the leaves begin to fade, then treat them as recommended before, and they will flower again the succeeding year.

PROPAGATION BY OFFSETS.—These may be planted in beds two or three weeks sooner than the usual time of planting the flowering bulbs. Make the bed of good light sandy soil, raised a few inches above the level of the surrounding ground, as recommended for the flowering bed.

Plant the bulbs in rows six inches apart, and four inches from bulb to bulb, or closer if they are very small; cover them with about two or three inches of light dry sandy soil, and nothing more is necessary than to keep the bed free from weeds, and occasionally to stir up the soil on the surface of the bed. Take them up at the same time as the flowering bulbs, replant them at the proper season, and treat them afterwards, in every respect as the old bulbs.



IXIA.

THE *Ixias* are very beautiful flowers with small bulbous roots, and are very easy of cultivation, flowering well in warm room windows, or in the Greenhouse. Their usual time of flowering is in April, May and June; although some species flower much earlier. The proper season for potting the roots is in September and October. The soil most suitable for them is equal parts of sandy loam, leaf mould, and peat, well mixed, although they will grow in any rich sandy loam. As the bulbs are small, several roots may be planted in one pot six or eight inches in diameter. Fill the pots to within an inch and a half of their rims, with the loam or compost, and place the bulbs, in a circle around the pot, with a few in the middle, and cover them about an inch deep. When potted, place the pots in a cold frame, (if convenient,) or in a sheltered situation, where they can be protected from heavy rains or frost till they have emitted roots and the leaves are up, then remove them into the Greenhouse or room window where they are intended to flower.

Water them sparingly till they show the flower stems, but during the whole time of flowering, they should receive a good supply of water. The plants at this time require to stand in light airy places, as the flowers open during the day, and close in the evening. As soon as the flowers are over, and the leaves begin to fade, cease watering them by degrees, and when the leaves are dead, keep the roots perfectly dry in the

pots (which is preferable to taking them up,) until September, then shake them out of the pots, separate the offsets and repot them.

There are many other small bulbous plants belonging to the order of Irideæ, that are very beautiful, and may be cultivated in the same manner as *Sparaxis lineata*, *S. grandiflora*, and *tricolor*; *Streptanthera cuprea*, and *elegans*; *Trichonema rosea*; *Tritonia crocata*, and many others.



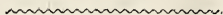
LACHENALIA,

ARE little cape bulbous plants, which flower in winter, or early in spring. There are many species, but the most common in cultivation are *L. pendula*, and *L. quadricolor*. They are cultivated in pots in the Greenhouse or rooms, where they are very pretty while in flower.

The bulbs should be repotted in September, in pots about five inches in diameter, if planted singly, but they make a prettier appearance when six or more bulbs are planted in a pot of nine inches in diameter, using rich sandy soil, and if convenient, about one-third of peat soil, or leaf mould, may be added. Place the bulbs in the pots, so that the soil will just cover them, and after potting, place them in a sheltered situation where they will not be exposed to heavy rains, until the nights become frosty; then remove them

into the Greenhouse, or room windows, and water them as they require it. When done flowering, keep them growing until the leaves turn yellow, and die off; then keep the bulbs quite dry in the pots until September, when they should be repotted and treated as before. They increase by offsets, which should be separated from the parent bulbs, and planted in separate pots.

The *Oxalis* Genus answers very well, and flowers freely under the same mode of treatment as last described.

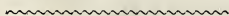


LOBELIA, (OR CARDINAL FLOWER.)

THE *L. Cardinalis* is a beautiful native plant, growing in brooks or moist places, and producing its fine scarlet flowers in August.

They are easily cultivated by removing them from their natural places of growth, and planting them in the garden in any rich moist soil, in which they will grow and flower well. There are several species of this plant, as *L. fulgens*, and *L. splendens*, which are of a fine scarlet. The *L. cærulea*, and *L. speciosa*, (the former blue and the latter purple,) are of the same habits of growth. They require to be taken up every year or two, and the old flower stems removed and the plants reset, for if they are left too long, the old flower stems decay, and cause the plants to die.

The little creeping species, as the *L. decumbens*, and its varieties, are usually sown as annual flowers, and grow well in moist soil in an open situation, producing its intense blue flowers in summer; but as they are perennial, they grow well in pots placed on a shelf in the Greenhouse, where the vines trail over the sides of the pots; and if kept moist, they flower nearly all the summer. They are easily propagated, by dividing them at the roots, or by cuttings and seeds. The *L. inflata*, (or Indian tobacco,) is sometimes used as a medicine, but as it possesses no beauty, it is not cultivated in gardens.



MATHIOLA, (or STOCK GILLIFLOWER.)

To PROCURE fine double stock Gilliflowers, as the Brompton, Queen, and Ten-week stocks, make choice of such single flowering plants as grow near double ones, for it has been observed that seed saved from plants growing among double ones has produced a much greater number of double flowering plants than that derived from plants remote from the double ones. Sow the seed in May, and when the plants have grown two or three inches high, thin them out about a foot apart, to allow them room to perfect their growth by Autumn. The plants so taken out may be put in any convenient place in the flower border, and should be taken up by the end of September and potted in any

rich sandy soil, and set in a shady place. On the appearance of frost, remove them into the greenhouse, keep them a little moist, and clean off the dead leaves. As soon as they begin to grow, allow them as much air as convenient, in fine weather; water them as they require it, and they will flower early in Spring.

The Annual or Ten-week stocks will flower the same Summer the seed is sown, and only require the treatment of hardy annuals. In saving their seed, select it from such plants as are of stout growth, and the flowers of fine color.

The greenhouse shrubby kinds, such as the night scented stock, will thrive in any rich sandy soil, and cuttings will root readily if planted in a pot of soil, and covered with a bell-glass.



MIGNIONETTE, (RESEDA ODORATA.)

THIS sweet-scented flower is a native of Africa, and although it is regularly grown as an annual, it will survive the winter, if kept in the greenhouse or room window, and flower freely, with moderate attention. When grown in the garden, the seeds merely require sowing, as directed for hardy annuals in general. But if grown in pots to place in the house, the following directions should be attended to.

TIME OF SOWING.—This will depend upon the time it is wished to have it in flower, if in October, Novem-

ber and December, the seed should be sown from the first week of July to the middle of August; but if in January and February, sow the seed in the first week of September. These separate sowings will require a somewhat different treatment.

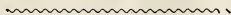
For July and August sowing, fill some flower pots with good garden soil to within an inch of the rim of the pot, sprinkle the seed on the surface and cover it lightly, then plunge the pots in the ground in an open situation, as this prevents the soil from becoming too dry, or the roots from being injured by the excessive heat of the weather. Water them carefully in the evening, and when the plants are half an inch high, thin them out, leaving six or more plants in a pot, according to its size. When the plants are two inches high, nip off the leading shoot of each plant, to induce them to throw out side branches. Towards the end of September, the pots must be taken up and placed in the situations where they are intended to flower. Set the pots close to the window, and water them as they require it.

For September sowing, the pots in which the seeds are sown should be placed on the south side of a fence, or in some situation where they can be protected from frost, and pieces of board should also be placed over them to keep off the heavy rains; but it is still better to plunge the pots in a garden frame and cover it at night with the glass. As soon as the plants are up, admit air in the day time, shut the frame at night, and treat them as directed for the preceding sowing. Here they may remain till the middle or end of October; then remove them to the situations they are intended

to flower in, and water them with caution, always selecting a fine day for the purpose, that the plants may have the benefit of a little air and sun afterwards, to dry their leaves and prevent their mildewing. If placed in warm room windows and the seed pods and dead leaves picked off as soon as they appear, they will continue in flower a long time.

For February sowing, the pots should be placed on the shelf in the greenhouse, but they do not require so much caution with regard to watering, &c., because they derive more benefit from the sun than those sown in Autumn, and if plenty of air be admitted in fine weather, and they are safely preserved from frost, there is little danger of their perishing, and they will flower finely in the Spring.

When pots of Mignonette are wanted for the window, in Summer, the seeds may be sown in April, and the pots placed on any warm sheltered border, where they will require the common care of hardy annuals; and when in flower, can be removed where wanted.



NERIUM, (or OLEANDER.)

THE Oleanders are fine plants for standing on a veranda, or in the approach to a house, where they will flower nearly all Summer, if freely watered. There are several varieties with both double and sin-

gle flowers. The *N. splendens* is considered one of the best, and being a hardy greenhouse plant, is easily managed, and will keep very well during winter in a cellar.

PROPAGATION.—The best way to propagate Oleanders is by cuttings from the young shoots taken in August or September. The cuttings should be taken off at a joint, and be from three to six inches long, and planted in pots filled with sandy loam, or sand and peat; and they will strike root freely if placed in a close frame with a little bottom heat. They may be kept in the cutting pots through winter, and early in Spring should be planted in single pots in any good rich soil. They may also be raised from layers, but they not unfrequently die after being taken off the parent plant.

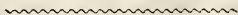
As the Oleanders are vigorous plants, they require a good soil. A compost of two parts loam, one ditto decayed manure, and one of peat, suits them well, and they should be shifted once a year, the best time for which is before they begin to grow in the Spring. Trim off the matted roots and loosen the ball a little shake off as much of the old soil as possible, and re-pot them in the fresh compost, (pressing the soil well between their roots,) and give them a watering.

The Oleander will seldom fail to flower freely, if kept in the coldest part of the greenhouse or cellar during winter, and early in Spring removed to a warm situation. From the time the flower buds make their appearance, the roots should be well supplied with water until they have done flowering, and their beauty

will continue much longer, if placed in the shade. In winter, when in a dormant state, they should be kept rather dry than otherwise, as it helps to ripen their shoots.

PRUNING.—Being terminal plants, they seldom require pruning, as it prevents their flowering until their next growth. When they have grown too tall, the best way is to head them down, which should be done early in Spring, or at the time of shifting. In this case, cut them down as low as you wish, for the inert buds will grow out from all parts of the stems, and they will make fine bushy plants by the Fall, and flower freely the next season.

They are subject to the white scaly insect under their leaves and upon their stems, which should be cleared away whenever they appear, by cutting off the most affected leaves, and washing the remaining ones as well as the stems, with soap and water.



ORANGE AND LEMON.

THESE are well known evergreen trees, belonging to the genus CITRUS, which contains several species, as the Orange, Shaddock, Citron, Lemon, and Lime, with many varieties of each. They are fine permanent plants for the greenhouse, where they are much admired for the exquisite fragrance of their flowers,

and fine appearance of their fruit. The dwarf varieties, such as the Mandarin, the Dwarf China Lemon, &c., are suitable for parlor cultivation, as they bear fruit when less than a foot in height, and are all easily managed.

They are propagated by sowing the seeds for stocks, which, when grown of sufficient size, are budded or grafted, and the dwarf varieties, as the China Lemon, &c., are increased by cuttings. The following is the mode of cultivation.

PROPAGATION.—Sow some seeds of the common Lemon, in the Spring, in pots filled with light rich soil, cover the seed about half an inch deep; place them in the greenhouse or hot bed, and as soon as the plants are about five or six inches in height, pot them off into other pots, putting from six to twelve in a pot, according to the size of the pots, using good rich soil. Plunge the pots up to their rims in the ground, in an open situation, and water them as they require it. The object of placing so many in a pot is to save room in the greenhouse, while they are in their young state. In Fall, remove them into the greenhouse for Winter, where they will only require the ordinary care of greenhouse plants, and water them sparingly. In the Spring following, prepare a bed in the open ground, of a light sandy loam, enriched with some decayed manure, and black soil from the woods. In May plant them out, either in the bunch as they are turned out of their pots, or separate them, and plant them singly in rows three inches apart, and the rows two feet distant from each other: Keep them clean from weeds, and water them occasionally in dry weather.

By August, such as have grown of sufficient size may be budded; for which purpose provide yourself with a sharp pen or budding knife and some soft matting or worsted, and having taken the cuttings from the trees you wish to propagate, cut off the leaves, but let the foot stalks remain. You must choose a smooth part of the stock about three or four inches above the ground; then with your knife make a horizontal cut across the rind of the stock, and from the middle of that cut, make a slit downwards about an inch and a half long, so that it may be in the form of a letter T, but you must be careful not to cut too deep lest you wound the stock. Take the scion in your left hand, and with your knife make two cuts across the scion, each about half an inch above and below the eye; and with your knife slit off the bud with the wood attached to it; then take out the wood from the bark in which the bud is fixed; and in doing this, be careful not to take the heart or root of the bud away with it. To ascertain this, examine the bud, and if the heart be gone, a small hole will be perceivable, and in this case you must try another. Cut the lower part of the bark to a point. The bud being now ready, take hold of the foot stalk with your left hand thumb and finger, hold it to the stock just above the cross-bar of the T, and open or raise the bark of the stock (within the perpendicular bar,) clearly down to the wood, and slip in the bud so that the upper part of it shall meet at the cross-bar of the T; then bring the bark of the perpendicular bar over the bark of the bud, and so, having exactly fitted the bud to the stock, take a piece of the matting, and begin to bind from a little below

the long bar to a little above it, taking care not to bind over the eye of the bud. The binding should be moderately tight, and the matting not twisted. In a month's time, if the bud lives, loose the bandage a little to prevent its cutting into the stock, but do not remove it until the bud has well grown on. Nothing further is wanted until the end of September, at which time the plants may be taken up and potted, and such of the buds as have taken, should be selected and put into pots by themselves; after which they may be removed into the greenhouse, and treated as before directed. In March following cut off the top of the stock two or three inches above the bud, which, when grown out, should be tied to it as a support.

At this time also the remaining stocks may be grafted, which can be performed in various ways with equal success; but the preferable mode is cleft grafting, as the wound heals much sooner than when the operation is performed in any other way.

Previous to grafting them, prepare a hot bed to place them in when grafted, for the warmth and moisture arising from the manure helps greatly to forward their union.

Grafting is performed by first cutting off the top of the stock a few inches from the pot according to the height of the stem required. Cut it off horizontally, and from the middle of the top of the stock, with your knife make a cleft an inch or more in length, downwards; shape the scion at its extremity, for about an inch, in the form of a wedge; leave it thicker on the outer side, and bring it to a fine edge on the inside; then insert the scion into the opening prepared for it,

placing it so that the inner bark of both scion and stock may meet together; and the knife being withdrawn, the stock closes firmly upon it, then tie round a piece of bass matting, and cover it over with some grafting cement. This being done, place them in the frame, and take care to keep a proper heat, and shade the plants with mats.

When they have properly taken, admit a little air, (but it must be sparingly at first,) and take care not to over water them. As soon as they begin to grow, more air should be admitted to prevent them growing weakly, and if one shoot be likely to take too much the lead of the others, pinch off the top.

When the grafts have grown, harden them gradually to the sun and air; and as soon as the Spring frost is over, set them with the budded ones into the ground for Summer, and they will grow and make fine plants by the Fall; at which time they must all have separate pots, and they will flower and bear fruit the next season.

SOIL.—Orange and Lemon trees may be potted in any good loam, with one-third part decayed manure, or the following compost will be found very suitable for them, viz: loam, peat soil, manure, leaf mould, and sand, (of each equal quantities,) which may be mixed as it is wanted for use. While they are young, and until of good size, they may be repotted every year, and afterwards once in two or three years will be sufficient, for as their roots are rather succulent, they do not like to be often disturbed.

These trees are easily managed when taken into the house, and may be placed on the back part of the

stage, as they do not require so much sun as many other plants. They should be sparingly watered in winter, but when they begin to grow in Spring, they require a more liberal supply, nor need they be shut up in the house like tender plants, but ought to have plenty of air at all seasons when admissible, and in Summer they should be put out early in the season; for although like Camellias, and indeed all plants with coriaceous or thick fleshy leaves, they are, from a variety of causes, liable to have their foliage injured by the sun, yet this injury would seldom accrue to them if placed in a somewhat shaded situation, and the pots or tubs regularly supplied with water in dry hot weather. They do not require much pruning, except heading down irregular shoots, and shortening the branches, so as to keep them in regular formed heads; and they should be pruned in September in preference to Spring, by which three or four weeks of their growth is saved; and when they are not shifted annually, they should be top dressed in Spring, by removing the old soil from the surface of their pots an inch or two, (injuring their roots as little as possible,) and supplying its place with fresh soil and manure; and after they have flowered and set their fruit, it should be thinned out, and no more left on the trees than they are able to mature; which will depend on the state of the trees and the quantity of soil they have to grow in. They are subject to the scaly insect, which should be cleaned off whenever it appears, and the trees syringed or watered over their leaves once or twice a week in dry weather. This will keep them clear of spiders, and give them a healthy appearance.

If Orange or Lemon trees have been neglected or mismanaged so that their tops are become unsightly or partly decayed, the best method to restore them is to take them out of the tubs or pots in the Spring, and prune their heads, cutting off all dead parts; then plant them out into the ground in good soil, or repot them, and by the Fall they will have renewed their heads, and will soon recover their usual vigor.

PROPAGATION BY CUTTINGS.—Cuttings may be taken from either old or young wood; and the best time for putting them in, is just when the plants from which they are to be taken, are beginning to grow. The time will therefore depend on the situation and treatment of the old plant. Let all the cuttings in one pot, be of equal length, and plant them from one to three inches in depth, fixing the soil firmly about them; using for the purpose, cleansand, or a mixture of sand and peat. Water them well to settle the sand about their stems; plunge the pots in a hot bed, and cover them with a bell glass, shading them from the sun. They will require but little water from the time they are put in until they have taken root; after which, they may be separated and put into single pots.



PELARGONIUM. (GERANIUM.)

OF late years, many new and beautiful hybrid varieties of this tribe of plants have been introduced, and their long continuance in flower, and fine colors, with their general good qualities combined, make them highly appreciated by all lovers of flowers.

From their natural habits, few plants are as easy to propagate and cultivate as Geraniums. Young plants generally produce the finest flowers ; and being of a more convenient size, are better adapted for room windows, than larger ones. Being vigorous plants, they soon get overgrown ; although if cut down when they have done blooming, and repotted, and carefully attended to, they will make fine bushy plants, and flower well the succeeding year.

Geraniums will grow in almost any kind of soil that is light and rich ; but they thrive most vigorously, and flower finest, in a compost made of one-half fresh loam, one-fourth partly decayed manure, and the remainder leaf, or vegetable mould, all which should be well mixed, but not sifted.

Towards the end of September, or on the appearance of frost, they should be removed into the greenhouse, or where they are destined for winter, placing them as near the glass as convenient, and not too close together, or they will lose their lower leaves, and be drawn up spindling. They should not have much water in the winter ; but a little may be given them, as the soil appears dry, and they should have plenty of air every fine day. Geraniums are

very impatient of frost; the house, therefore, must be kept of sufficient temperature to exclude it, but no more fire heat should be given them in mid-winter, than is sufficient for that purpose. When the green fly, (*Aphis*,) appears on them, they should be fumigated with tobacco, and occasionally syringed, which will keep them clean and healthy.

In February, the first raised plants will show their flower buds, and the roots will appear through the hole at the bottom of the pots; they must then be shifted into larger ones for flowering, which should be from six to nine inches in diameter, according to the strength of the plants, using the before mentioned compost, and well watering them. The latter raised plants should be shifted in succession, as they require it, and supplied with abundance of air, light, and water. They will soon come into flower, and by their beauty, amply recompense the trouble taken with them. While they are in bloom, if shaded from the meridian sun, the flowers will be retained much longer.

When they have done flowering, such as are designed to be kept over for the next season, should be removed to the open air, and placed in a shady situation, and cut down to within six inches of the pot. When they have produced new shoots, they may be repotted in fresh soil and smaller pots, and treated as before directed. The others may be planted out of the pots into the garden, where they will occasionally flower during summer.

Geraniums are also well adapted for the flower garden, for which purpose, plants raised in September,

January, or March, are most suitable. They may be set out in beds, as early as the Spring frost is over, at about a foot distant each way, and should be well secured to sticks, as they advance in growth, to prevent their being split down by storms. In dry weather they should be occasionally watered, and they will grow very vigorously, and flower all the early part of the summer; and by August or September, will have made plenty of young shoots, which may be slipped off, when about five or six inches long, to raise plants for the next season.

Cuttings may be put in at almost any season of the year, where there is the convenience of a green-house; but the usual times for propagation are in July and August, and where a succession of flowering plants is wanted through the season, the cuttings may be put in in the months of January, March, June, August, and September. Cuttings may be taken from tops of the old plants, choosing such as have the young wood tolerably perfected; or young shoots that grow out from the main branches may be slipped off, when four or five inches long. Cut them smoothly across the bottom joint, and trim off the leaves close to the stem, from the part which it is intended to insert in the soil.

When the cuttings are prepared, take as many small pots as there are cuttings, and fill them with light sandy loam, or a compost of leaf mould, loam, and sand, in equal parts; put each cutting in the center of the pot, from one to two inches deep, according to the length of the cutting; press the soil firmly down in the pot, and around the cuttings; then give

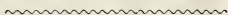
them a gentle watering, after which the pots should be placed in a hot-bed frame, where there is a moderate heat, the sashes of which should be kept close for a few days after they are first placed in the bed, and they must be shaded from the sun ; after which a little air should be admitted in the evening to prevent their damping, and a little water may be given to such as are dry, but not over their leaves, as it often causes them to damp off, and prevents their rooting. After the first fortnight, air should be admitted more freely in the evening, and in calm warm weather, the glass should be left open during the night, as atmospheric air is of great help to them when they begin to grow ; but it should be shut down close in the day, and well shaded. In five or six weeks, they will be rooted, and should be gradually hardened to the sun and air ; and as soon as they commence growing, they should be shifted, with their balls of earth entire, into the next size pots, and placed in a sheltered situation, until the season arrives for taking them into the house.

Where there is not the convenience of a hot-bed or frame, the cuttings may be planted in pots of six or nine inches diameter, filled with light loam or compost, to within an inch of the rim, and the cuttings inserted around the sides of the pots, and placed on the front stage of the green house, or in any warm situation, where they can be shaded from the sun, and watered occasionally, until they have rooted. The cuttings may also be planted in the open ground in a shady border, in June, July, or August, where they will nearly all root, if protected from heavy rains ;

and this may be done by placing an inverted flower pot over them, which can be removed when the storm is over. In six or seven weeks, they will be rooted, and may then be taken up, put in small pots, and removed into the green-house or room windows.

When Geraniums are grown in rooms, place them as close to the windows as convenient, and as soon as the plants are about ten inches high, pinch off the ends of the shoots, as this causes them to push out a number of lateral branches, and makes them bushy. Water them sparingly in winter, and occasionally wipe their leaves with a wet sponge; this will keep them clear of dust and insects. Turn them round once a month, that all parts may have the benefit of the light, and grow regularly; and when the roots protrude through the hole at the bottom of the pot, shift them, with the ball of roots entire, into larger pots, filling up the space with fresh soil. Repotting will prevent their flowering until the pots are again filled with roots, but they will flower finer and longer than if confined in small pots. Those in large pots will not require shifting, but as soon as they show their flower buds, more liberal supplies of water may be given to them, and they will soon come into flower. In May or June, while they are in flower, they will continue in beauty much longer, if placed in a situation that is partially shaded, such as the veranda or a window not exposed to the full sun, and regularly watered in the evening. As soon as they have done flowering, they should be pruned, by cutting out the flower stalks, and shortening such of the shoots as require it; after which they may be placed out in the

garden in a sheltered situation, and be watered as they require it. In August, they should be turned out of the pots, and after shaking the old soil partly from the roots, be repotted in fresh soil. By being repotted thus early, the plants will be in good condition when the season arrives for taking them into the house.



PRIMULA PRÆNITENS.

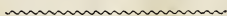
THE Chinese Primula, from its free blooming habits, and pretty appearance in the winter months, is a desirable plant for a room window. It is usually raised from seed, which should be sown early in Spring, in a pot of rich sandy soil, placed on a shelf near a window, and the soil kept a little moist. When the plants are of sufficient size, they should be potted in separate pots, in any rich light soil, and in Summer, may be plunged in the flower beds in a shady place, or they may be planted out in moist ground, and they will often flower throughout the season. They must be taken in before frost, and potted, and kept in the shade till they have recovered; and those kept in pots should be shifted into larger ones, before fall, and be kept in a cool room window, till they show their flower buds, then placed in a warm room and watered freely, and they will soon come into bloom.

PRIMULA AURICULA.

THIS is a very pretty Spring flowering plant, containing a great variety of colors. To cultivate the Auriculas to advantage, they should be protected from heavy rains, which injure them, by washing the powdery bloom off their leaves, and shaded from the sun in summer. Where any number of them are grown, it is a good plan to plunge the pots in a north border and protect them by a garden frame, raising up the back of the sash to admit air, and watering them as they become dry. When the plants have done flowering, which will be about the month of May, they should be repotted in a compost of loam, decayed manure, and sand, in doing which, pick off the dead leaves, and if it is desired to increase them, divide them with the fingers, and break off the old stump at the bottom, but do not cut them with a knife, as it injures them very much. When potted, give them a little water, and place them in the frame for summer. In the fall, previous to taking them in for winter, take a little of the old soil from the top of the pot, and topdress them with some fresh compost, and if they require a larger pot, shake them out, and put them into a larger one with the same ball entire, filling up the pot with fresh soil, and giving them a little water ; then place them in a cool shady part of the house, and keep them rather dry, till they begin to grow, and when in flower they may be watered pretty freely.

PRIMULA VULGARIS, (OR POLYANTHUS.)

IS ANOTHER pretty Spring plant, and hardy enough to live in the garden through winter, if protected by a covering of straw. It however makes a pretty pot flower, if taken up in the fall, and potted in any good sandy soil, and kept in a greenhouse or room window ; when in flower, it should be watered freely, and kept a little in the shade. In summer they may be planted out in the garden. The Polyanthus, Daisy, and Violet will live through winter, if not much exposed to the sun, and covered over with straw, early in the fall. A bed filled with those plants near the house would be very pretty in Spring, as they flower very early ; and if some Dodecatheons are planted in amongst them, it would improve the general appearance.



POLIANTHES, (OR TUBEROSE.)

THE TUBEROSE, is a bulbous plant with bright green linear leaves. The flower stem rises three or four feet high, terminating in a spike of white flowers of great fragrance. There are two species, and one variety cultivated, viz :—the *P. tuberosa*, with a single white flower, and *P. flora plena*, a double variety, which is most generally cultivated ; the *P. gracilis*, a pale yellow flowering species from Brazil, is more tender, and should be grown in pots.

To have tuberoses flower early, plant the roots in pots filled with light rich loam, and place them in a hot bed, or cucumber frame, and by the end of May turn them out of the pots into the garden, place a stick to the flower stems, and tie them up to prevent their being broken. When a hot bed cannot be had, the roots may be planted in May in an open situation, setting them 6 inches apart, and about three inches deep, keep them free from weeds, and water them freely in dry weather, and they will flower in September.

When the frost has cut down the tops, lay some straw loosely over them, till the middle of November, to prevent the frost from entering the ground, then take them up, cut off the leaves, and place them in an airy place to dry, and when dry, keep them in a drawer in a room, free from frost and mice.

As the tuberoses flower but once from the same root, it is best to procure fresh roots for flowering, but they make plenty of offsets, which if cultivated, will in two or three years produce flowering roots again.



POINSETTIA PULCHERRIMA.

A FINE plant belonging to the genus *Euphorbia*, and very suitable for parlor cultivation, as they require a warm atmosphere, and mostly flower in winter. It displays its fine scarlet bractæ to great advantage,

and flowers in a season when few other plants are in bloom. The *Euphorbia jacquiniflora*, is a very beautiful plant, producing clusters of brilliant scarlet flowers, and the *E. splendens* is a prickly plant, with deep orange colored flowers.

They are free growing plants, and are as easily managed as geraniums, and in many respects require similar treatment ; but they are more permanent, and grow to be large plants in a few years, (if well managed,) and when in flower they make a splendid show. When they are taken into the house in autumn, place them in a warm situation, and keep the soil in the pots moist, while the leaves are growing, and until they have done flowering ; after which water them sparingly, as they will remain in a state of rest until spring. In May, they should be cut down, and turned out of the pots, and repotted in fresh soil, composed of sandy loam, peat or leafmould, in equal quantities. Plunge the pots in the ground in an open sunny situation, and water them as they require it during summer. They grow also very freely when planted in the ground, but as the roots spread considerably, they are injured in taking them up, so that the best way is to keep them in pots. In September, remove them into a warm room, where the temperature is about 60 deg., and they will flower well during the winter.

PROPAGATION.—They grow freely from the ripe cuttings, taken off when they are pruned in Spring, and planted in pots of sandy soil, and placed in a hot bed ; and when rooted, they should be potted off, and treated as the old plants ; or the cuttings may be stuck

in the ground in a warm situation, where they will root during summer, and be taken up and potted in autumn.



RANUNCULUS ASIATICUS.

THE RANUNCULUS is a beautiful flower, with small tuberous roots, usually imported from Holland along with bulbs, &c. The imported roots if they are good ones, will generally flower the first season, but owing to the difference of this from their native climate, they luxuriate in foliage and divide into offsets, so that they seldom make roots for flowering again the next season.

As the ranunculus is rather more tender than the Anemone, and more liable to be killed by the frost and wet in this climate, unless they are well protected, the best way to secure a show of flowers is to prepare a bed in the fall, (say October,) and plant the roots in the spring. Having selected the bed intended for them, spread it two or three inches thick with decayed cow manure, and dig it in pretty deep, laying the soil up in a ridge in the center, to carry off the water. Early in April level down the bed, and spread over it a thin coat of fresh sandy loam; mark with a rod, some lines across the bed, six inches apart, place the roots carefully in the rows with the crowns upwards, four or six inches apart, and lay a portion of sand

round and upon each root; then cover them over with about two inches of the loam.

Never select the largest roots to plant in a flowering bed, for they generally divide into offsets, and seldom flower well; but choose those of middle size, with the crown high, and firm to the touch, and your expectations will be less likely to get disappointed.

It is indispensable that the roots never be allowed to come into contact with the manure or decaying vegetable substance, or they will become more or less injured. When the leaves appear above ground, choose a dry day, and press the soil firmly about the roots with the hand, as if the weather proves dry, and the crowns of the roots happen to be exposed, they will suffer material injury. In dry weather they will require watering; and this must be continued, if they require it, until they are in full bloom.

In situations where the sun has great power, shading must be resorted to or the leaves will become yellow, and but few flowers will be produced. They should also be shaded while they are in flower, or they will soon fade. This shading may be done either with an awning, or hoops placed across the bed, and covered with mats; but whichever way it is done, a current of air must be allowed to pass underneath, or the stems will be weakly and unable to support the flowers. As soon as the leaves have died away, take up the roots, clean them, and put them to dry on a tray, or in an airy chamber, not exposed to the sun. When dry put them in a drawer, till the season arrives for planting.

Ranunculus roots will keep good out of ground for two years, if kept from frost and damp. They will flower at various seasons according to the time of planting ; those set out in April will flower in July ; and those planted in May and June will flower in August and September.

The Ranunculus also flowers well in pots in the Greenhouse, or room window. In August fill some flower pots with rich sandy loam, nearly even with the rim of the pot, give it a rap on the bottom, to settle the soil, but do not press it down, level the surface and lay on it a little sand ; then select the roots and place them in a circle round the pot, about three or four inches apart, and put one in the middle ; press them gently in with the hand, and lay a little more sand over them, filling the pot level with the rim with soil, and give them a gentle watering, then place the pots in a sheltered situation till the appearance of frost, after which remove them into the greenhouse, or room window. Supply them with water as they require it, and they will soon flower. Other plantings may be made monthly during the winter which will flower in succession. Roots that have been kept out of the ground one year, will be best for this purpose, as they will grow much quicker, than those which were taken up the last season. The Ranunculus is increased by separating the offsets from the root, and by seeds from new varieties.



ROSE.

THE Rose is universally esteemed the Queen of flowers, uniting the most delicate colors with the richest perfume; and in every country where they will grow, are considered the greatest ornament, whether in the garden, or in pots for the window, or Greenhouse, and as a further recommendation, they are easy of cultivation.

The varieties of roses of late years have become so numerous, that to give a list of the different kinds would occupy too much space in this work. We shall therefore divide them into a few classes in order to treat of their cultivation.

HARDY ROSES—Which may be described under two divisions. 1. The hardy bush or garden rose. 2. The hardy running rose.

The hardy bush or garden rose will include, *Rosa PROVINCIALIS*, or cabbage rose, *R. DAMASCENA*, or Damask Rose, *R. CENTIFOLIA* or Hundred leaved rose, *Rosa GALLICA*, French or Provins Rose, and *R. MUSCOSA* or Moss Rose.

The variety of these species include the greatest number and comprise the most beautiful roses. These species of roses when growing in a shrubbery or flower garden crowded by other shrubs, shoot suckers from their spreading roots which if left to themselves would soon exhaust the old plant. It is to this division of roses that the rules usually given for their cultivation chiefly apply. These roses in general thrive

best in a rich loamy soil, and in an open situation, as they will not do well long where they are crowded in amongst large growing shrubs or trees, although when planted around the margin of a shrubbery they are very ornamental, but they thrive best in a flower garden, when planted in beds or clumps by themselves. There is a natural desire to possess them in their greatest beauty, both as regards their flowers and also their general appearance, and the accomplishment of this will depend in a great measure on the taste of the designer, and local circumstances. To attain their full perfection in size and color, they should have an open situation, so as to give abundance of air and light; and to look well, they should be grouped together, in such a manner as to form a pyramid, rising gradually in height from the dwarf roses around the base, to the tall roses in the centre, forming its apex. The disposing of roses in beds in this manner will require but little explanation; the chief point being only to plant the more vigorous growing kinds in the centre of the beds, and include as great a variety of colors as possible. Such a disposal of roses would at the time of flowering make a most splendid show, and could be adapted on a large or small scale, as suited the space allowed them, or the amateur.

CULTIVATION.—Roses may be planted either in the fall or spring, as soon the frost is out of the ground. If they are planted in rows, they should be three feet apart, and the plants four feet from each other, placing them so that a line drawn from any three of them to each other would form a triangle. Thus they would have

sufficient room, and be all exposed to view. The soil should be well dug and manured previous to planting them, and they should be dressed at least once in two years, with a mixture of fresh loam and manure, which will cause them to grow well and flower finely. After they have remained several years in the same ground and begin to decline in vigor, take them up, and divide them, selecting the best of the shoots, prune them down, replenish the soil with fresh earth, and replant them, and they will flourish vigorously.

The pruning of hardy bush roses is essential to their flowering well. This in small gardens is much neglected, as very seldom more is done than to cut off the dead tops, but in these cases the flowers are neither so fine or numerous as they would be, if regularly pruned. In pruning these roses, cut out as much of the old wood as possible, but so as not to disfigure the bush, then shorten the last years growth according to the strength of the shoots, or to one-third or half their length, also remove the suckers, as they exhaust the plant.

When it is desirable to prolong the blooming season of hardy roses, alternate bushes may be left unpruned till the buds on the upper part of the bush have grown out an inch or two; then cut off the shoots just below where the buds have so grown out, which will cause those on the lower part of the shoot to grow and come into flower a week or two later. The shortening of the shoots so late in the spring does not in the least weaken the bushes, which grow as vigorously and flower as freely as in the usual mode of treatment.

Such kinds of these roses as throw up suckers freely, may be increased by separating them from the parent plant in the spring, and shortening their tops and setting them out either in nursery rows, or where they are to flower. Those that do not sucker freely are usually increased by layering or budding.

2. **HARDY RUNNING ROSE.**—Under this term may be included the following kinds. **RUBIFOLIA** or **Prairie Rose**, **BOURSAULT ROSE**, **AYRSHIRE ROSE**, and **HYBRID RUNNING**, of various kinds.

Many of this class of Roses are very strong growing plants, and not unfrequently send up shoots from the main stems, ten or fifteen feet high in one season, overtopping the shrubs that grow near them; others again, as Ayrshire creepers, and Multiflora trail along the ground, or support themselves by bushes growing near them, if not otherwise trained.

This class of Roses strike their roots much deeper in the ground than those lastly described, and also extend them considerably along the surface in quest of nourishment. They grow best in a deep rich sandy loam, and require to be well manured. They also thrive in a much less airy or open situation than Bush Roses as long as they are not overtopped by large trees, or otherwise entirely shaded; nor do they require so much pruning as the other sort, for it renders them less productive of flowers.

These roses are much used for pillars, and training up verandas, &c., for which they are well adapted, making more show than the generality of climbing plants when in flower.

THE NOISETTE, or cluster Rose, may be called a half running rose, and can either be tied to stakes, or trained over low trellises. The Ayrshire Roses send out from their main shoots numerous branches, interlacing each other so closely, that the dead leaves collecting amongst them, make it troublesome to keep them clean; otherwise they are very good roses for nailing over fences or to hide any unsightly object.

Running Roses require pruning, more or less, annually, which is best in part performed soon after they have done flowering, for at that time they commence throwing out vigorous shoots near the root, and also from the main branches. In pruning them, as many of the old stems as are past flowering, (if there are young shoots to supply their places,) should be cut out as near the ground as possible, or to the point from whence the young shoots grow out, and the young shoots should be tied up in their places, as they proceed in growth, to prevent their getting broken; then let them remain till November, at which time, where the shoots are too thick, they may be thinned out, and distributed equally upon the trellis or pillar a few inches apart, and secured in their places. The shoots should not be shortened, as they produce flowers to their very extremities the next season, and no more of the young wood should be cut out than is sufficient to keep the plant in its proper form, and within requisite bounds. There are various ways of training Running Roses, the most simple of which is to tie them to a single stake, or a trellis or pillar. When trained upon a veranda, they should not be suffered to entwine their branches through the lattice work,

but be well tied up on the outside, as otherwise it is very inconvenient to remove them without injury to the plants, when any repairing or painting is to be done.

If planted on the margins of avenues or garden walks, and trained to single stakes, the ends of one bush may be tied to those of another, forming festoons ; but when they are planted in the center of the flower beds, or rosary, they show to the best advantage. When trained upon pillars, (the frame of which may be made by a joiner, or simply by four strong stakes, set in a rectangular form, with a taller one in the centre,) roses of different colors should be planted at each of the stakes, choosing such as are of similar growth ; they will have a beautiful effect when in flower.

PROPAGATION.—All hardy roses are best raised by layers, whenever it can be done, as they make the most permanent plants. The end of July, or beginning of August is the proper time, and the following is the method. Look over the bushes intended to be layered, and choose such shoots as are sufficient length, and bend them gently to the ground ; take off the leaves from that part of the shoot that will be under ground ; and bend the end of the shoot upwards ; remove the soil below the crook to the depth of three or four inches, and place the shoot in the hole ; then choose a bud on the upright part of the shoot next above the bow, and make an incision just below the bud, half way through the stem, and two inches long ; give the branch a slight twist, that the part so cut may rest upon the soil, and stick in a peg to secure it in

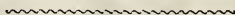
its place; cover it up with the soil, and press it firmly to the layer, securing it to a small stick. In the following spring cut off the layers that are rooted, and head them down to within three or four buds of the surface, then plant them out in good soil, and they will flower the next season.

Many of the hardy Running Roses, as the Bour-sault, Michigan or Prairie roses, and others of similar habits, will root very freely, by layering the young shoots, when in a soft growing state, without cutting them; merely bending them to the ground, and covering them with a few inches of soil. The Noisettes or cluster roses, and other half hardy kinds, will grow freely from cuttings, taken from the bushes in the fall at the November pruning. They should be cut into lengths of five or six inches long, then tied into bunches and buried in a dry sandy soil during the winter. In spring, take them up, and plant them in a bed in rows at eight inches apart, keep them clean of weeds, and water them in dry weather. In the Spring following, they may be planted out where wanted to flower.

The varieties of *ROSA SPINOSISSIMA*, or Scotch roses, to which the yellow Harrison belongs, have slender branches, and numerous thorns with fibrous roots, and grow very near the surface of the ground. They prefer an open situation in the garden, but do not require so deep or strong a soil as the other species of roses, and neither do they need much pruning, except cutting out the old stems when they are past flowering, and as they sucker from the roots freely, they are mostly raised by that method.

PERPETUAL ROSES.

THIS is a class of of hybrid Roses, between the Asiatic and European kinds, possessing the hardiness of the one, with the free blooming habits of the other. Many of them will flower all the summer, in the temperature of Europe, but the extremes of this climate, prevent their doing so here, though they are frequently full of buds at the approach of frost. They commence their growth at the same time in Spring, and come into flower in June, as the other roses ; and if the season is favorable, they make a second growth, which will also flower. In hot dry weather they will flower but little.



TENDER OR MONTHLY ROSES,

ARE such as require protection in this climate, during the winter season, in which may be classed the INDIA OR BENGAL ROSE, TEA ROSE, ISLE DE BOURBON ROSES, NOISETTE ROSES, &c., with the various hybrids of their respective families. The sudden and rapid way in which these roses send forth their shoots and produce flowers immediately on a change of temperature, together with their delightful fragrance, (particularly tea roses,) makes them general favorites with all lovers of the rose family. From their hab-

its they are well adapted to flower at almost any season of the year, if they are properly managed. Where monthly roses are cultivated, either in green-houses or rooms, in the ordinary way, they grow and rest alternately, according to their situation ; for although they are easily excited to grow and flower, they require at some part of the year, a season of rest, to regain their strength and vigor. They require a somewhat different treatment, as they are wished to flower in summer or winter.

This class of roses is usually grown in pots for the convenience of placing them where they are wanted to flower, and of taking them into the house for protection in winter. Their cultivation for winter flowering may be as follows: Pot them in a compost of good garden loam, with about one-third of decayed manure, and to prevent its hardening in the pots, some sand may be added with a portion of black soil. Drain the pots with broken pot or gravel, place a little soil over the drainage, and set in the plants, spreading their roots a little, and fill up the pot with the compost, pressing it gently down, and giving a little water to settle the soil. The roses that are intended for flowering the next winter, should be repotted in May, and the pots plunged in the ground up to their rims, in a northern aspect, not under the shade of any large trees. If the plants are small, nip off the flower buds that appear during summer, in dry weather, and give them a watering occasionally, and they will have grown to good sized bushes by the fall. In August, take the pots out of their holes, and examine their roots, to see if any have grown out

through the holes at the bottom of the pots ; in which case they should be shifted into larger pots, according to the size of the plants, disturbing their roots as little as possible. Give them a little pruning at this time, by thinning out the slender shoots, and shortening the straggling stems, and replace them in their former situation in the ground, where they may remain till the end of September or beginning of October. On the appearance of frost, take them up, wash the pots clean, and top dress those that were not shifted in August with fresh soil, and remove them into the green house or room windows ; for many of them at this time will probably be in flower, or full of buds, and will soon come into flower. Give them as much air as convenient in fine weather ; water them as often as they require it, and clear off the dead leaves ; also, cut off the ends of the flower stalks as the flowers fade ; and they will continue to flower more or less through winter. Whenever the green fly, (*Aphis*,) appears, the plants should be immediately fumigated with tobacco, but in rooms where it is inconvenient to do this, they may be rinsed in soapy water, or the insects brushed off with a wet sponge. As soon as the nights get cold and frosty, the greenhouse should have the temperature kept up with fire, say to 50 degrees, by night, and 60 degrees by day. Keep the soil in the pots tolerably moist ; give air in fine weather, and they will flower till Spring. They may then be taken out of the house, pruned, and repotted in fresh soil, shaking the old from their roots. Place them in their summer situation, and treat them as before described.

The roses intended for blooming in summer, should be fresh shifted in October, and placed in the greenhouse, cold frame, or pit, where they will require only the ordinary treatment of green-house plants. Give them but little water, when not in a growing state, and keep them clear of dead leaves and insects; they will come into flower early in Spring.

Roses of these kinds grow and flower much finer when planted in the open ground, and if set out in April, or early in May, in a good soil, and in an open situation, they will grow to large plants, and flower beautifully all the summer. Take them up by the middle of October, pot, and place them in a frame, or a situation where they can be protected from the frost and heavy rains, until they have recovered their removal; then clear away the dead leaves, tie up such as require it, and place them in their situations for winter.

When roses are brought into the house, and placed in room windows, they will continue in flower till late in the fall, or even to mid-winter; but the heat of the rooms will at this time, cause them to drop their leaves, and they should be placed in a cooler room, or in the cellar during the severe weather. Towards Spring, they may be placed in the parlor again, and they will soon grow out and flower finely.

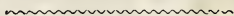
The whole of this class of roses grow freely from cuttings taken during the summer, but they root more freely in Spring and Autumn. Take the cuttings from the ripe shoots of the previous growth; cut them close below a joint, than fill pots for as many as are wanted, with rich light sandy soil, and plant the

cuttings from one to two inches deep, according to their length; press the soil firmly in the pot round the cutting; give them a gentle watering, and place the pots in a shady situation, covering them with a frame or bell glass. Give them but little water till they begin to grow, and as soon as they have struck root, and made their first growth, shake them out of the pots, and plant them separately in small ones; shade them till they have recovered their removal, and then put them in the green house.

Where standards are wanted, or large bushes, they may be obtained by budding them on young stocks of the purple Boursault. The common Michigan rose makes a good stock for the Noisette, or other strong growing kinds; the best time to bud which is in June, but they may be budded from June to September; those that are budded early in the season, will grow out and flower the same summer, but those budded later, will remain in the stock till the following Spring. The GREVILLE ROSE, makes a good stock for planting in the ground in the green-house, where it may be trained round the pillars, and can be budded with a variety of Tea, Noisette, or other monthly roses, and being an evergrowing rose, it will flower freely all the winter, if the house is kept to a moderate temperature.

When roses are in the green-house or rooms, in the winter season, they are very apt to become infected with mildew on their leaves and buds, particularly if crowded too closely. The remedy usually adopted, is to cut off the most affected leaves, and to wash the remainder with soap and water. Some

gardeners add flower of sulphur, or nitre to the soap water, a little of which is beneficial, but if used in too large quantities, it is injurious to the plants.



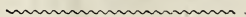
SALVIA.

THE *Salvias* are fine plants for the greenhouse in Fall and Winter, producing spikes of fine scarlet flowers, and when intermixed with other plants, they make a rich appearance.

It is an extensive genus, though the kinds mostly cultivated are the *S. splendens*, and *fulgens*. The *Salvias* require to be raised annually, as young plants flower much better than old ones; they will grow in any light soil, with some decayed manure mixed with it. In March or April, take off some young shoots from your old plants and set them in pots filled with sandy soil, making them firm in the pot, and give them a little water. If you have a hot bed they may be placed in that, as they will root much sooner; or they may be set on a shelf in the conservatory, and if covered with a glass and kept a little moist, they will soon root; when they should be separated into small pots and kept in the house till frost is over, and then placed in the garden, with a stick to each plant, as, if not tied up, they are very apt to be broken. In September, take them up, pot them, and set them in a shady place till they have recovered their removal, and then place them in the conservatory, and they will soon come into flower.

The *S. fulgens* flowers well in a garden during Summer; and when it has done flowering, should be cut down, and the roots taken up and potted.

The *S. patens* is a beautiful blue species, producing its flowers nearly all the Summer. It has a tuberous root, dies down during Winter, and sprouts again in the Spring in the same manner as a Dahlia. In the Fall, the roots require to be taken up, potted, and set under the stage of the greenhouse, and kept dry during Winter. When they begin to grow in Spring, they may be kept in the house till the time for setting them out. They can be increased by cuttings like the others, or by seed.



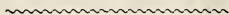
SCHIZANTHUS.

ALL the species of this genus are beautiful plants, and grow freely in rich sandy soil, but their roots are rather tender, and apt to be injured by extreme changes of the weather.

Those who possess a greenhouse may have a good show of these flowers by sowing the seeds in August in any light rich soil. As soon as the plants have formed two proper leaves, pot them singly in small pots in sandy loam and decayed manure; let the plants be rather elevated in the centre of the pots to prevent their damping, and place them in a cool airy part of the greenhouse during Winter. In March, shift them

into larger pots, and when the Spring frost is over, the plants may be turned out into the flower garden, and if put in beds, set them about eighteen inches apart, at right angles, and at the same time sow some seed in the intermediate spaces, and you will have plants to follow in succession, which will flower nearly all Summer.

Any other choice annual flowers may be treated in the same manner.




THUNBERGIA.

ALL Thunbergias are very pretty climbing plants, and are also suitable for window cultivation, as they commence flowering when small plants, and continue doing so during the Summer and Fall.

Sow the seed in April or May in pots filled with equal quantities of light sandy loam and leaf mould; cover the seed lightly, give a gentle watering, and place them in a room window where the temperature is about 60 degrees, keeping the soil moist, and the plants will make their appearance in two or three weeks. As soon as the young plants show the volute, shake them out of the seed pot, and put one plant in a pot of four or five inches diameter, (using the same kind of soil,) place a stick in the centre two or three feet high, for the volute to twine upon, and as soon as it has reached the top of the stick, pinch off the end,

and shift the plant, with the ball of roots entire, into a pot six or eight inches diameter, adding a little more loam and some decayed manure with the soil. Lateral shoots will soon be produced from the crown of the plant, which may be tied to the centre stick, or others may be placed in for them to twine upon. When they reach the top of the sticks, they may be turned down, and suffered to twine or fasten as they will. Water the plants as often as the soil appears dry, and they will soon be in flower. A few seed pods may be left to ripen, and the others taken off as soon as the flowers fade.



TIGRIDIA PAVONIA, or TIGER FLOWER.

THIS is a very beautiful bulbous plant, and produces its flowers in succession during Summer. As each flower lasts but one day, it shows best by being planted in a bed by itself, and as several flowers are produced from the same spatha, they show to more advantage.

In April, spread some decayed manure on the bed, and dig it over, breaking the soil fine; then draw drills across the bed eight inches distant, and plant the bulbs four inches apart in the rows, covering them three inches deep. Nothing more is required than to keep them free from weeds, till the leaves die in Autumn, when the roots should be taken up, carefully dried, and put into bags till Spring; or they may be preserved in the same manner as before directed for the roots of *Commelina Tuberosa*. They are increased by dividing the bulbs.

TULIP.

THE Tulip is a beautiful flower, and much admired for its gay and vivid colors. It is considered to be a native of the Levant, and is very common in Syria and Persia. It was introduced into Europe in the sixteenth century, and during the two following ones was extensively cultivated, and considered the chief flower of the garden. Towards the close of the last century, the study of botany began to gain ground, and in a few years, such a variety of new plants were introduced into the garden, that the tulip lost its ascendancy; they however, still continue to be cultivated to a great extent, both in Holland and England, by amateur florists, and to this day, like the hyacinth and other flowers, are held by them in high estimation.

They are divided by florists into three classes, 1st, **BYBLOEMENS**, or such as have a white ground, variegated with purple, the edges well feathered, the leaflets of the perianthemum erect, and the whole forming a well shaped cup. 2d. **BIZARRES**, having a yellow ground variegated with scarlet, purple, rose, or velvet, well feathered round the edge. 3d. **ROSES**, with a white ground, variegated with rose color, scarlet, or crimson. **PARROTS**, are odd tulips, red and yellow, with fringed edges, and green stripes. Tulips are easy of cultivation, and will grow in any soil that is not too wet; but a light rich sandy loam is most suitable for them. Their beds should be in an open airy situation, and ought to be prepared for them in

October, a week or two before planting, that the ground may be properly settled. The beds intended for them should be dug a foot or more in depth, according to the soil, and some old manure placed at the bottom of each trench, but not mixed with the soil; for if the bulbs touch the manure it will cause them to decay. These beds should be a few inches above the level of the walks.

Early in November, proceed to plant the bulbs, by marking out the rows across the bed, at eight inches apart, and remove the soil from them about four inches deep; then mark the spots for each bulb four or six inches apart; place a little sand for the bulbs to rest upon, and set them in, pressing them gently to fix them in a proper position, after which, cover them up, and proceed in like manner with each row. When the whole is planted, level the surface so that the bulbs may be about four inches deep. If planted in a southern aspect, the rows should run north and south; if in an eastern aspect, east and west. The blossom bud of the tulip should always face the south. The tulip root is in a degree, conical, flattened a little at the base on one side; here the bud lies, from which the flower stalk proceeds; the leaves issue from the top of the cone, the flower stalk passing through them. The Dutch are so careful not to injure the bud, that they always leave one or two inches of the flower stalk, adhering to their tulips, when in a dried state. It is chiefly for want of this care, that tulips are seldom found two years successively in an equal degree of perfection.

After being planted, they will require but little attention, except covering the beds that are much exposed to the weather, with straw. No fresh or strong manure should be used, as it will destroy the roots. In spring they will appear above the ground, when the covering should be removed, and the ground between the rows hoed, to fill up the cracks occasioned by the frost, and neatly raked over.

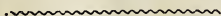
When the stems grow up, and the flowers begin to color, such as require it should be supported, otherwise the wind may break them down. For this purpose, sticks should be prepared of a proportional length and thickness, to which the stems should be fastened.

The tulip, when in bloom, should be shaded from the violence of the meridian sun, otherwise they will be of short duration; and when past flowering the seed-pods should be taken off, or they will weaken the bulbs.

The time for taking up the roots is usually in June, or when the leaves are withered; they should then be laid in an airy place, but not exposed to the sun, and when they are well dried, they should be freed from their loose skins, and placed in a drawer until the time of planting. Tulips are increased either from offsets or seeds; the season for planting is usually two or three weeks earlier than the flowering roots, setting them out in the same way, but closer together.

The dwarf or early Tulips flower beautifully in pots, particularly the Duc Van Thol Tulips. Choose for this purpose, pots about eight or ten inches in diameter, fill them with good rich sandy soil, about

two-thirds full, rap the pot on the bottom, to settle the soil, but do not press it in, level the surface, and place in a little scouring sand, then select the bulbs, and place six or eight of them in each pot, setting them in a circle with one in the centre; fill up the pot to within an inch of the rim, with the soil, that the top of the bulbs may be about even with the surface of the soil; water them sparingly until they commence growing, after which they will require more frequent watering. Place them in a window, where they can have as much sun and air as possible, till they are in flower, then remove them into a more shady place, and they will remain in flower for several weeks. The bulbs should be taken up as soon as the flower stalks and leaves begin to decay, and be kept in the way directed for the other sorts.



VIOLA TRICOLOR.

THIS is also called Pansy, and has become a flower of some repute among florists, as many of the varieties have remarkably large flowers of brilliant colors. The seed should be sown in Spring, or as soon as it is gathered from the plants in summer. In April or May, make the bed in which it is intended to sow the seed; it should be of rich soil, and in a shady situation; lay just as much fine soil over the seed as will cover it, and gently pat it down, and if the weather

is dry, water the bed a little. In ten days or a fortnight, the plants will be up, and when they are an inch or two high, transplant them with little balls of earth at their roots, into beds; placing them in rows, four inches apart every way; and as this is the bed in which they are intended to flower, always select a moist situation, and keep them free from weeds. If any of the plants have remarkably fine flowers, they may be increased by layers, or by dividing their roots. Layering should be done in May or September, and is performed by making a slight incision in the stem at a joint, and pegging it down about an inch in the soil. They can be taken up and divided at any time in summer, except in hot dry weather, and a moist cloudy day should be chosen for the purpose.

To ensure a fine show, it is necessary to renew the plants by seed, layering or dividing the roots every year, as old plants invariably produce small flowers.



VERBENA.

THE Verbena is one of the greatest acquisitions that has been introduced into the garden of late years, and numerous varieties have been raised from seed, embracing a variety of colors.

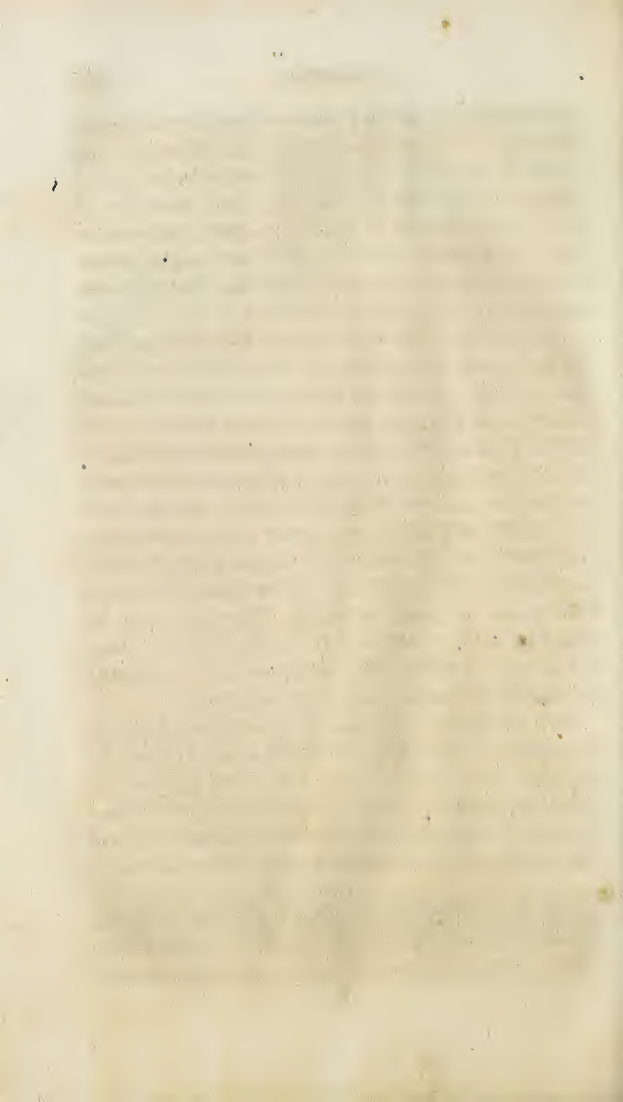
Verbenas intended for the flower garden, should be planted out early in May in a bed prepared for them, and a circular form a little elevated in the centre, is the

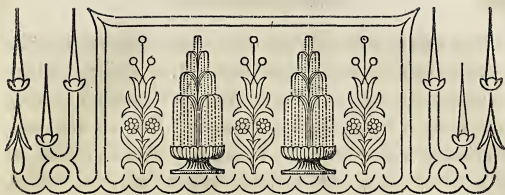
preferable shape, as the flowers will appear to the best advantage. The strongest kinds should occupy the centre of the bed, and the smaller sorts be put round the margin at a foot from the edge, and there should be as many varieties of color as possible in the same bed. Verbenas are also very pretty when planted out in the borders in any vacant spot, where they will soon spread and exhibit their gay flowers.

This plant propagates itself so readily that it requires but little art in its cultivation. The following is the best method. In August or September, take as many small pots as you wish plants, and plunge them in the ground near the extremities of the shoots, filling them about two-thirds full of soil, and pegging the shoots into the pots, cover them with a little soil, and in a few weeks they will have struck root, and may be separated from the parent plant, and shifted into a larger pot ; after which they can be removed into the Greenhouse or room windows. They may also be raised by cuttings taken off in spring, which, if planted in pots of sandy soil, and placed in a moderate hot bed or cucumber frame, will root freely.

New varieties are obtained from seed, which should be carefully looked after, for as soon as it is ripe, the capsules open, and the seed falls to the ground. It should be sown as soon as gathered, except it be near the end of September, in which case it is best kept till the following spring, and then sown in the garden.







PART THIRD.

ANNUAL, BIENNIAL, AND PERENNIAL FLOWERS.

ANNUAL FLOWERS.



MOST Annual flowers are raised from seed, and are either hardy, half hardy, or tender plants. The hardy kinds of annuals may be sown in open spaces in the borders of the flower garden as early in spring as possible. When the half hardy and tender annuals are wanted to flower early, they should be sown in a hot bed, and transplanted into the garden when the danger of frost is over; but where a hot bed cannot be had, the seed should not be sown till the weather has become settled and warm; as annuals are liable to many casualties.

The hardy kinds will thrive well in any light garden soil, with little attention, except keeping them free from weeds. The more tender kinds require rather greater care during their early growth, afterwards they grow well in the same soil as the hardy ones.

TREATMENT OF HARDY ANNUALS.—As soon as the garden has been dug and dressed in spring, (which in warm situations will be in April,) commence sowing the seed in the following manner. Stir up the soil, and make it fine with the hand, if it be a light soil, or if a heavy one, with a small hoe or garden trowel, then with the finger or a piece of stick, draw a circular drill about six inches in diameter, and about one inch deep, according to the size of the seed, and habit of the Plant intended to be sown ; sow the seed evenly in the drill, and cover it with fine soil. The best time to sow, is when there is an indication of rain, and in clayey soil subject to crust on the surface, after the rain has fallen, as it will come up much more easily. When the plants are an inch or two high, they must be thinned out, if too thick, that those remaining may have room to grow and flower strongly. If sown in succession from April to the middle of June, there will be a constant supply of flowers till the autumnal frosts kill them. Sticking and tying up such as require support, and occasionally stirring the soil, and sometimes watering them in an evening, is all that is necessary for their well doing.

After sowing the patch of seeds, and covering it with fine moist soil, place an inverted flower pot over it ; let this remain till the seeds have struck root, when the pot must be raised two or three inches ; keep it thus elevated a few days, and then remove it entirely. The pot not only tends to keep the soil moist, but the sun heating the pot, the seeds come up much more quickly than otherwise they would do, in consequence of which, they need not be sown so early, by a week

or more, as is necessary in the usual way; and the plants are less exposed to the spring frosts, and the soil is not washed off by heavy rains.

TREATMENT OF HALF HARDY AND TENDER ANNUALS.—The seeds of the half hardy annuals, may be sown in May, as directed for the hardy ones, as the weather will then be warm enough for their vegetation, and the growth of the plants. The tender annuals, to have them flower early in summer must be brought forward in a hot-bed, which should be made by the end of March or beginning of April; for which purpose prepare some hot horse manure, by throwing it up in a heap to let the rank steam pass off, which it will do in a few days; then mark out the dimensions of your bed, (letting it be a few inches each way larger than your frame,) form the manure into a square mass, beat it well down with the fork, but do not trample it till it is about two feet high, then set on your frame, and lay on about four inches depth of soil, composed of two-thirds sandy loam, and one third of thoroughly decayed manure; then cover it with a sash, and let it stand three days after to settle; after which level it properly, and rake the surface smooth, then with the hand draw some shallow drills about three inches apart, and thinly scatter the seeds of each sort in the drills, covering them lightly over with some fine sifted soil. The quantity of seed sown will probably not occupy all the frame, and the whole of it will be wanted for transplanting in about three weeks. After the seed is sown, it will be necessary to admit air by tilting the back part of the sash in the

day time, (shutting it down close at night,) and when the plants appear, they will require to be shaded from the noon day sun, with a garden mat. As soon as the seedling plants are an inch or two high, commence transplanting them, about two inches apart, each sort by itself, beginning at that end of the frame previously unoccupied by them; when they are all planted, give them a gentle watering, and put on the sash. As they begin to grow, give them plenty of air, and water as they require it. They should be gradually exposed before they are inured to the open air; then taken up with good balls of earth, and planted in their proper situations in the flower garden. Some kinds of plants have tap roots and do not transplant well; these may be sown in pots, and placed in a spare part of the frame, and when this is wanted, they can be removed into the Greenhouse or a room window, till the weather is favorable for setting them out in the garden.

As the summers in this climate are usually warm enough for the growth of nearly all the tender annuals, those who have no hot-bed may select such of this kind as they wish, and sow them from the middle of May to the first of June; with a little attention to watering in dry weather, they will grow as freely as other annuals, and mostly flower in August and September.

Where there is the advantage of a Greenhouse, many kinds of annuals can be had to flower early in spring, by sowing the seed in August in pots, and removing them into the Greenhouse in the fall. Place them on a shelf near the glass, in a cool airy part of the house, and in February or March a few of each kinds may be shifted into larger pots to flower in the

Greenhouse, where they will make a fine show amongst the other plants in spring. The remainder of the plants can be set out in the garden in May, and they will be in flower in June.

The following species are very beautiful, when grown in pots. *Alyssum maritimum*, *Clintonia pulchella*, *Mignonette*, *Gillia capitata*, *Nemophila insignis*, *Lobelia decumbens*, *Iberis coronaria*, *Rhodanthe manglesii*, *Schizanthus pinnatus*, *Victoria stock*, &c.

Many of the hardy annuals, also thrive well by being sown in the fall, particularly the California annuals, as they are less liable to be affected by the heat and dryness of this climate. The best plan is to sow them in a spare bed, in small patches, and the plants will appear early in spring, when they can be easily removed with the garden trowel, to the situations in which they are intended to flower.

The following sorts may be sown in the fall. *Nemophilas*, *Leptosiphons*, *Collinsias*, *Gillias*, *Lasthenias*, &c. The Double-Rocket Larkspurs should be sown where they are to remain to flower.

Phlox Drummondii succeeds very well if sown in the fall, and transplanted into a fresh dug bed in the spring. From its procumbent habit, it is best grown in a bed by itself, where it will flower all the summer.



A SELECTION OF ANNUALS.

HARDY.—Which may be sown in the open borders as early in April as the season will admit.

COMMON NAMES. COLOR. BOTANICAL NAMES.

White.

Sweet Alyssum.	Alyssum maritimum.
Venus' Looking Glass.	Prismatocarpus Speculum album.
Candy Tuft.	Iberis odorata alba.

Purple.

Candy Tuft.	Iberis speciosa.
Venus' Looking Glass.	Prismatocarpus Speculum.
Many flowered Eutoca.	Eutoca multiflora.
Milfoil Leaved Gilia.	Gilia achilleæfolia.

Blue.

Showy Nemophila.	Nemophila insignis.
Paradox Nolana.	Nolana paradoxa.
Two-colored Lupine.	Lupinus bicolor.
Small Lupine.	—— micranthus.
Dwarf Convolvulus.	Convolvulus minor.

Yellow.

Californian Poppy.	Chryseis California.
Saffron-colored Poppy.	—— Crocea.
Two-colored Calliopsis.	Calliopsis bicolor.
Yellow Lupine.	Lupinus luteus.
Drummond's Evening Primrose.	Ænothera Drummondii.

Rose.

Label's Catchfly.	Silene armeria.
-------------------	-----------------

Variegated.

Drooping Leaved Lupine. *Lupinus elegans*.

Changeable do. ——— *mutabilis*.

N.B. The varieties of Rocket Larkspurs and Sweet-peas are so numerous, that they are purchased generally in mixed colors.

HALF-HARDY.—Requiring to be raised in a hot bed for early flowering, or the seeds to be sown in May.

White.

Mexican Poppy. *Argemone grandiflora*.

Common Petunia. *Petunia nyctaginiflora*.

Purple.

Beautiful Clarkia. *Clarkia pulchella*.

Californian do. ——— *elegans*.

Hooker's Schizanthus. *Schizanthus hookerii*.

Purple Petunia. *Petunia violacea*.

Dark purple Salpiglossis. *Salpiglossis atropurpurea*.

Yellow.

Arabian Cladanthus. *Cladanthus arabicus*.

Yellow Zinnia. *Zinnia multiflora flava*.

Elegant Madia. *Madia elegans*.

Blue.

Elegant Clintonia. *Clintonia elegans*.

Blue Trachymene. *Trachymene cærulea*.

Scarlet and Crimson.

Showy Calandrinia. *Calandrinia speciosa*.

Splendid Sandwort. *Portulaca splendens*.

Vermilion-flowered Mal-

low.

Malvia minata.

Scarlet Indian Pimpernal. *Anagallis indica*.

Scarlet Zinnia.	Zinnia coccinea.
Red do.	—— multiflora rubra.
Drummond's Phlox.	Phlox drummondii.

Variegated.

Blunt-petaled Schizanthus.	Schizanthus retusus.
Pinnated-leaved do.	—— pinnatus.
Three-colored Gilia.	Gilia tricolor.

China and German Asters, Ten-week and German Stocks, and Double Poppies, are very numerous; and seeds of each variety may be obtained at the Seed Stores, either separate or mixed.

TENDER.—May be either raised in a hot bed, or the seeds sown from the middle of May to the middle of June.

Blue and Purple.

Creeping Lobelia.	Lobelia gracilis.
Large flowering Browallia.	Browallia grandiflora.
Globe Amaranthus.	Gomphrena globosa.
Ice Plant.	Mesembryanthemum chrystallinum.
Bird's-foot Trefoil.	Lotus Jacobæus.

Rose or Pink.

Great flowering Cleome.	Cleome grandiflora.
Sensitive Plant.	Mimosa sensitiva.

Yellow.

Yellow Martynia.	Martynia lutea.
Silvery Manulea.	Manulea argentea.

Scarlet.

Scarlet Cockscomb.	Celosia cristata.
--------------------	-------------------

There are numerous varieties of the Balsam, which may be obtained at the Seed Stores.

CLIMBING ANNUALS.

Cypress Vine.	<i>Ipomœa Quamoclit.</i>
Winged Thunbergia.	<i>Thunbergia alata.</i>
Barclay's Maurandia.	<i>Maurandia barclayana.</i>
Canary Bird Flower.	<i>Tropœolum peregrinum.</i>
Hyacinth Bean.	<i>Lablavia vulgaris.</i>
Morning Glory.	<i>Convolvulus purpureus.</i>

Climbing Annuals require to be supported with sticks or trellis, and should occasionally be twined or tied up with a string. They may also be planted at the foot of Peach, Cherry, or other trees that are not too shady, and twined round their stems.

The Climbing Annuals are generally free growing plants, and abundant flowerers. They are not so much appreciated as they should be, for they are fine plants for setting around arbors, or twining over fences, for which purpose strings may be fastened on the top of the fence or building, and secured to the ground with pegs. On these strings they will twine very gracefully, and by the abundance of their flowers, amply repay the attention given them.

The Cypress Vine and Thunbergia seeds are rather tender, and often decay in the ground when sown too early. They will vegetate freely if sown as late as the last week of May or first of June. The seed should be soaked in water the evening previous to sowing it, and if set in an open situation, it will be up in a few days, and grow rapidly.

BIENNIAL FLOWERS.

BIENNIAL Flowers may be divided into two kinds, viz: *hardy* and *tender*. They are raised from seed sown in Spring or Summer, and usually flower in the succeeding year, when they generally die, if allowed to bear seed; although many of them will live for three or even four years, if the flowers are cut off and not allowed to go to seed, and the plants are preserved from injury.

The hardy kinds may be either sown in the open borders, or in a bed set apart for that purpose, in April or May; they will grow in any good garden soil. Sow them in shallow drills, and cover the seeds with fine soil, and when two or three inches high, transplant them into other beds, four to six inches apart, to allow them room to grow strong; and when they have grown to a good size, they may be removed, with as much earth as will adhere to their roots, and planted in their final destination in the flower garden. This may be done either in Spring or Fall.

The tender kinds of Biennial plants that are liable to be killed in Winter, may be taken up and potted in the Fall, and protected in a frame during Winter; or the pots can be placed in the greenhouse, and if shifted into larger pots in March, they will flower by the end of May, and may then be planted out in the garden, where they will flower the greater part of the Summer.

Many kinds that ripen their seeds early in Summer, should be sown as soon as convenient after being

gathered ; whilst those that do not ripen till September or October, must not be sown till the following May.

Such kinds as grow with long tap roots, should be sown where they are intended to flower, as it injures them to break their roots.

HARDY BIENNIALS.

Snap Dragon.	<i>Antirrhinum majus.</i>
Evening Primrose.	<i>Oenothera grandiflora.</i>
Columbine.	<i>Aquilegia vulgaris.</i>
Rose Champion.	<i>Agrostemma coronaria.</i>
Canterbury Bell.	<i>Campanula media.</i>
Sweet William.	<i>Dianthus barbatus.</i>
Foxglove.	<i>Digitalis purpurea & alba.</i>
French Honeysuckle.	<i>Hedysarum coronarium.</i>
China Pink.	<i>Dianthus chiniensis.</i>

TENDER.

Elegant Ipomopsis.	<i>Ipomopsis elegans.</i>
Two-colored Calandrinia.	<i>Calandrinia discolor.</i>
Climbing Cobea.	<i>Cobea scandens.</i>
Elegant Humea.	<i>Humea elegans.</i>

In the foregoing list of Annuals and Biennials, we have selected only such plants, as when in flower, make a fine show in the garden, and are easy of cultivation.



PERENNIAL FLOWERS.

PERENNIALS are all such plants as have suffructious or herbaceous stems, which are not woody like shrubs, but have permanent roots of many years duration. They are of two kinds, viz: Deciduous, and Evergreen. Deciduous herbaceous plants include those whose stems die down every year, and grow up again in the following spring. Evergreen herbaceous plants comprise such as retain their leaves all the winter; of these, some are bulbous-rooted, as tulips, lilies, &c., others tuberous-rooted, as Pœonias, commelina, dahlias, &c., or fibrous rooted as Phloxes, rudbeckias, and hardy herbaceous plants in general, to which the term is chiefly applied. Perennial plants are (next to shrubs) the principal plants for decorating the flower garden; and being mostly of a hardy nature, requiring but little care, are easily managed. From the great variety of them, and the different periods at which they flower, they are of much importance in every garden.

The tall growing kinds are chiefly planted in open spaces, amongst the shrubbery, and at the back of the borders; and the dwarf ones in the spaces in front, or intermixed with other plants in the flower beds; and if they are carefully arranged according to their heights of growth, times of flowering, and colors of the flowers, they produce a very agreeable effect. To secure handsome plants, they should stand at a sufficient distance from each other, for if crowded, they will injure each others' figure.

Perennial plants have much the advantage over annuals and biennials, for when they are once planted, they continue for several years in beauty; and many of them increase freely by offsets, suckers, and division of their roots. Their cultivation consists principally in cutting off the flower stems, when they are past flowering, reducing such as extend themselves too freely to within a moderate space, and enriching the soil every year or two, with a manure compost, or fresh soil.

When they remain too long in one place, they decline in vigor, and flower feebly; in this case they should be taken up, their roots divided and planted in fresh soil, or if restored to their former position, the ground should be well manured and dug deeply.

The Perennial plants may be increased in many ways, but those principally adopted are by seeds, cuttings, suckers, layers, and division of the roots.

SEEDS.—The seeds may be sown in spring, in beds set apart for that purpose, and when the plants are of sufficient size, they should be transplanted into the flower garden to the situation where they are to remain for flowering, or they may be sown in spare places in the beds or borders, and there remain. If too thick, they should be thinned when the plants are an inch or two high.

CUTTINGS.—This method is usually practiced with choice herbaceous plants, that increase slowly by roots, as double scarlet *Lychnis*, double *Rockets*, *Phloxes*, &c., and is performed by cutting off some of the

flower stems just before or while they are in flower, as the stems are then in a firm state, and root much more easily, than when they become pithy; cut the stems off close to the ground, and divide them into lengths of three or four joints each, trim off the leaves from that part intended to be inserted in the earth, and plant them about half their length deep, in moist soil, and in a shady situation, and they will grow freely.

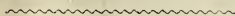
SUCKERS.—These only require to be separated from the parent plant, with as many fibres attached to their roots as possible, and to be replanted where they are wanted.

LAYERING.—This is chiefly adopted with such plants as do not grow freely by cuttings, as Pinks, double Sweetwilliams, &c., and is performed by choosing such young shoots as can conveniently be brought to the ground, and making an incision at a joint, (as for other layers,) and covering them an inch or two with soil. If they do not comply well in laying them down, they must be secured with a hooked stick, and as soon as they have taken root they may be separated from the parent plant.

DIVISION OF THE ROOTS.—This may be performed on almost any kind of herbaceous plant, either in spring or autumn. It consists in nothing more than with a sharp spade, knife, or other instrument, dividing each root into as many parts as are wanted, taking care to keep two or three shoots or eyes in each part. These may be planted out in the beds or borders, where they are to remain to flower.

The tuberous-rooted plants, such as *Pœonias*, dahlias, &c., can be divided with a knife, being careful to leave an eye on each part, or they will not grow. Bulbous rooted plants such as Lilies, &c., are increased by separating the offsets from the main bulb.

In transplanting herbaceous plants, dig a hole with the spade or trowel sufficiently large to give the roots room to spread freely, and as deep or a little deeper than they were before, and fill up the hole with the soil around them evenly, and press it with the feet to make them fast in the ground. Tender Perennials with either bulbous, tuberous, or fibrous roots, must be taken up in the autumn, and placed in a frame, greenhouse, or cellar. Such as are evergreen or choice plants, are usually potted in the fall, and kept on the shelves amongst the other Greenhouse plants until spring, and then planted out in the garden.



A SELECTION OF PERENNIALS.

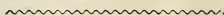
Nepaul Monkshood.	<i>Aconitum nepallensis.</i>
Orange Swallow-wort.	<i>Asclepias tuberosa.</i>
St. Bruno's Lily.	<i>Anthericum liliastrum.</i>
Red Mountain Daisy.	<i>Bellis perennis.</i>
Paper Bellflower.	<i>Campanula persicifolia.</i>
Double blue and white do.	——— var. <i>plena.</i>
Profuse flowering Corn Flag.	<i>Gladiolus floribundus.</i>

Lance leaved Coreopsis.	Coreopsis lanceolata.
* Scarlet Chelone.	Chelone barbata.
Illinois Acacia.	Darlingtonia brachyloba.
Garden Pinks, (many varieties.)	Dianthus hortensis and plumarius.
Double Larkspur.	Delphinium grandiflorum plenum.
Bee do.	—— elatum.
Azure blue do.	—— azureum.
Red Fraxinella.	Dictamnus rubra.
White do.	—— alba.
American Cowslip.	Dodecatheon meadia.
White flowering do.	—— alba.
Lady of the Lake.	Dracocephalum speciosum.
Dentated leaved do.	—— denticulatum.
Blue Eupatorium.	Eupatorium cælestinum.
Purple spiked Epilobium.	Epilobium spicatum.
White Day Lily.	Hemerocallis japonica.
* Yellow Hibiscus.	Hibiscus manihot.
Double perennial Sunflower.	Helianthus multiflorus.
Sweet Rocket or Arcadia.	Hesperis matronalis.
Iris or Flower de Luce.	Iris, (many species.)
Spanish Bulbous Iris.	—— xiphium.
English do. do.	—— xiphioides.
Long spiked Liatris.	Liatris spicata.
White Lily.	Lilium album.
Orange do.	—— auranticum, (and many other species.)
Perennial Flax.	Linum perenne.

Willow Herb.	<i>Lythrum salicaria.</i>
Leafy Lupine.	<i>Lupinus polyphyllus.</i>
White flowering do.	—— <i>albiflorus.</i>
River Lupine.	—— <i>rivularis.</i>
Everlasting Pea.	<i>Lathyrus latifolius.</i>
Double Scarlet Lychnis.	<i>Lychnis chalcedonica.</i>
Brilliant do.	—— <i>fulgens.</i>
Perennial Poppy.	<i>Papaver bracteatum.</i>
Chinese double white Pæonia.	<i>Pæonia whitelei.</i>
—— double rose do.	—— <i>humei.</i>
—— fragrant do.	—— <i>fragrans.</i>
Potts' fine Crimson.	—— <i>pottsii.</i>
Reeves' fine Rose.	—— <i>reevesii.</i>
Purple tree Pæonia.	<i>Moutan banksii.</i>
Poppy flowering tree do.	—— <i>papaveracea.</i>
Narrow leaved Penstemon.	<i>Penstemon angustifolia.</i>
White Foxglove do.	—— <i>digitalis.</i>
* Murray's fine do.	—— <i>murrayanus.</i>
Phlox or Lychnedia.	Phlox, (many species and varieties, all very beautiful.)
Jacob's Ladder.	<i>Polemonium ceruleum.</i>
Poetic Primrose.	<i>Primula vulgaris.</i>
Polyanthus, (many varieties.)	—— <i>cauliscens.</i>
Purple Rudbeckia.	<i>Rudbeckia purpurea.</i>
Yellow do.	—— <i>fulgida.</i>
* Pink Root.	<i>Spigilia marylandica.</i>
Double Meadow-sweet.	<i>Spiræa ulmaria plena.</i>
Siberian do.	—— <i>lobata.</i>
Dropwort or Pride of the Meadow.	—— <i>filipendula.</i>

Double do.	———— plena.
Goat's-beard do.	———— aruncus.
Blue spiked Veronica.	Veronica spicata.
Scarlet Valerian.	Valeriana rubra.
Fragrant do.	———— phusica.
Violets, (many varieties.)	Viola var. .
Thready Yucca.	Yucca filamentosa.

Those marked with a star are tender, and require to be taken up in Autumn, and set out in the Spring.



INSTRUCTIONS FOR LAYING OUT SMALL GARDENS, AND PLANTING TREES AND SHRUBS.

WHERE new gardens are formed, the ground should be properly prepared by digging it over, and leveling it before any trees or shrubs are planted; and if the soil is shallow, some fresh earth should be procured, to make it of sufficient depth.

A portion of manure will also be necessary to ensure the growth of shrubs and herbaceous plants, and a small quantity of lime may be advantageously added to decompose the stable manure, which should be spread about two or three inches thick over the ground, and subsequently well dug in.

For the formation of a flower garden, no particular plan can be prescribed, as in almost every instance some varieties will be necessary to suit the particular circumstances, but the following may be taken as general hints.

Where there is an open space in front of the house, a portion of it should be laid out as a grass plat, on which should be planted a few of the handsomest kinds of shrubs, but they ought not to be crowded, nor set too near the house, and it is desirable so to dispose of the shrubs and trees as that they shall hide from view, any unseemly objects that would otherwise present themselves to view from the parlor windows. In like manner all the subordinate offices of the house may be surrounded with shrubbery.

For a small garden, the parterre is most to be recommended, because it admits the greatest quantity of flowers in the least space. The design or plan on which it is laid out will depend on the shape and size of the ground, and the taste of the proprietor; but it should have gravel walks and box edges. The arrangement of the beds, and contrasting of the colors, are the principal things to be attended to.



PLANTING TREES AND SHRUBS.

THE transplanting of trees and shrubs is attended with more or less success according to the suitableness of the soil, and the injury the roots may have sustained in removing them, but its success principally depends on the care with which the operation is performed. That many trees die when first planted is unquestionable, but in most instances this may be traced to the following causes,

1st. The injudiciousness with which they are planted.

2nd. The inadaptation of the soil to the nature of the tree.

3rd. The length of time they have been out of the ground.

Trees should be removed with care, so as to preserve as many roots as possible, and if any get broken, or injured, they should be pruned off, and while the preparation for planting is going on, the roots should be covered with soil, to prevent the sun and wind drying them.

When trees have been received from a distance, immediately after being unpacked, the roots should be covered with earth, (or as it is termed,) *laid in*, until the ground in which they are to be planted is ready to receive them. If the soil in which they are to be permanently planted, be a good loam, or in a previously cultivated state, little more will be required, than to prepare the holes, which should be dug out full spade deep, and made sufficiently large to admit the roots of the tree to be planted in their natural direction. Loosen the soil at the bottom of the hole, and set the tree so that it may be quite as deep, or an inch or two deeper than it previously stood. When all is ready, set the tree, spread out the roots carefully, and cover them with two or three inches of fine soil; give the tree a gentle shake, so as to admit the soil between the roots, and trample it as the hole is being filled up, to close any cavities that might otherwise remain.

Leave it a little hollow round the tree, to admit the rain, and in dry weather, it may be necessary to water

it occasionally. Some manure may be laid on the ground, to prevent too rapid an evaporation of its moisture, and the tree should be secured to a stake to preserve it from rocking. In clayey ground which retains water, the holes should be dug considerably deeper, and some stones laid in them, that the water may drain away from the roots.

The transplanting of deciduous trees and shrubs, may be safely performed when the sap is not in motion, either in spring or fall, from the middle of October, to the middle of November. Much however depends on the nature of the soil, if it is wet or heavy, the Spring is the preferable time; as the frost acts with considerable force in wet ground, and sometimes draws the roots above the surface. In the spring, planting may be performed as early as the season will admit.

Evergreens succeed best when planted in the spring, and they should be removed just previous to their commencing their growth.



A LIST OF ORNAMENTAL TREES AND SHRUBS.

COMMON NAMES.

Horse Chestnut.

Rock Maple.

Sugar. do.

BOTANICAL NAMES.

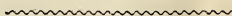
Æsculus hippocastanum.

Acer montanum.

—— *saccharinum.*

Scarlet flowering do.	——— rubrum.
Norway do.	——— plantanoides.
Chinese Ailanthus.	Ailanthus glandulosa.
Catalpa.	Catalpa syringæfolia.
European Ash.	Fraxinus excelsior.
American white do.	——— acuminata.
Kentucky Coffee-tree.	Gymnocladus canadensis.
Tulip Tree or Whitewood.	Liriodendron tulipifera.
European Larch.	Pinus larix.
American do.	——— microcarpa.
Silvery leaved Abele.	Populus alba.
Balsam do.	——— balsamifera.
Locust Tree.	Robinia pseudacacia.
Weeping Willow.	Salix babylonica.
European Linden.	Tilia platyphylla.
American do. or Basswood.	——— americana.
White or Drooping Elm.	Ulmus americana.

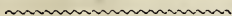
These are all large growing trees, and are mostly planted for shade.



ORNAMENTAL TREES OF LESSER GROWTH.

Striped bark Maple.	Acer striatum.
Judas Tree or Red-bud.	Cercis canadensis.
White Fringe Tree.	Chionanthus virginica.
Large flowering Dogwood.	Cornus florida.
Laburnum or golden chain.	Cytisus laburnum.

Chinese Kœlreuteria.	<i>Kœlreuteria paniculata.</i>
Umbrella Magnolia.	<i>Magnolia tripetala.</i>
Glaucous do.(very fragrant.)	——— <i>glauca.</i>
Venetian Sumach, Fringe or Smoke Tree.	<i>Rhus cotinus.</i>
European Mountain Ash.	<i>Sorbus aucuparia.</i>
American do.	——— <i>americana.</i>



ORNAMENTAL SHRUBS.

Dwarf white flowering Horse Chestnut.	<i>Æsculus macrostachya.</i>
Scarlet flowering do.	——— <i>pavia.</i>
Double flowering Almond.	<i>Amygdalis flore pleno.</i>
Pink Azalia or Honey- suckle.	<i>Azalia nudiflora.</i>
White flowering do.	——— <i>viscosa.</i>
Purple Calycanthus or Sweet-scented Shrub.	<i>Calycanthus lævigatus.</i>
Downy Red flowering do.	——— <i>floridus.</i>
Clethra, (very fragrant flowers.)	<i>Clethra alnifolia.</i>
Bladder Senna.	<i>Colutea arborescens.</i>
Scorpion Senna.	<i>Coronilla emerus.</i>
Pink Mezerion.	<i>Daphne mezereum.</i>
White do.	——— <i>v. album.</i>
Strawberry Tree or Burn- ing Bush.	<i>Euonymus americanus.</i>
European do.	——— <i>europæus.</i>

White fruited do.	——— albus.
Purple flowering do.	——— atropurpureus.
Snow-drop or Silver-bell	
Tree.	Halesia tetraptera.
Two winged do.	——— diptera.
Althæa Frutex or Rose of	
Sharon, (many varieties,	
with single or double	
flowers.)	Hibiscus syriacus.
Laurel leaved St. John's-	
wort.	Hypericum kalmianum.
Profuse flowering do.	——— prolificum.
Spice Bush.	Laurus benzoin.
Carolina Syringo.	Philadelphus grandiflorus.
European Fragrant do.	——— coronarius.
Large flowering scent-	
less do.	——— inodorus.
Scarlet flowering Japan	
Quince.	Pyrus Japonica.
Rose Acacia.	Robinia hispida.
White flowering Spiræa.	Spiræa salicifolia.
Corymbose flowering do.	Spiræa corymbosa.
Lady's Wreath do.	——— hypericifolia.
Five leaved bladder nut.	Staphylea pinnata.
Purple Persian Lilac.	Syringa persica.
White Persian do.	——— var. alba.
Siberian or Chinese.	——— chinensis.
Snowball or Guelder-rose.	Viburnum opulus.
Tree Cranberry.	——— oxycoccus.
Red Tartarian Bush Hon-	
eysuckle.	Xylosteum tartaricum.
White flowering do.	——— var. album.
Siberian do.	——— sibericum.

EVERGREEN TREES AND SHRUBS.

Tree Box.	<i>Buxus arborescens.</i>
White Cedar.	<i>Cupressus thuyoides.</i>
Swedish Juniper.	<i>Juniperus suecica.</i>
Broad leaved Kalmia or Laurel.	<i>Kalmia latifolia.</i>
Balsam or American Sil- ver Fir.	<i>Pinus balsamea.</i>
Norway Spruce Fir.	<i>Abies excelsa.</i>
Black or Double Spruce.	<i>Abies nigra.</i>
Red or American do.	—— <i>rubra.</i>
American Mountain Lau- rel.	<i>Rhododendron maximum.</i>
Chinese Arbor Vitæ.	<i>Thuya orientalis.</i>
American do.	—— <i>occidentalis.</i>
Hemlock Spruce.	<i>Abies canadensis.</i>



HARDY VINES AND CREEPERS,

For covering Walls, Arbors and Trellises.

Trumpet Flower.	<i>Bignonia radicans.</i>
White Virgin's Bower.	<i>Clematis virginica.</i>
Purple Flowering.	—— <i>purpurea.</i>
Cluster flowering Glycine.	<i>Westaria frutescens.</i>
Chinese Beautiful.	—— <i>consequana.</i>
White Jasmine.	<i>Jasminum officinale.</i>

English Honeysuckle.	<i>Lonicera periclymenum.</i>
Belgic or Monthly do.	——— <i>belgicum.</i>
Scarlet Trumpet monthly.	<i>Caprifolium sempervirens.</i>
Yellow do. do.	——— <i>fraseri.</i>
Oranged colored.	——— <i>pubescens.</i>
Chinese Evergreen.	<i>Lonicera flexuosa.</i>

In the selections of Trees and Shrubs, we have given such as are the most beautiful, and can be readily procured. Most of them may be had at the provincial nurseries, but where a greater variety is wanted, they may be obtained at the larger establishments, where catalogues can be consulted.

MANAGEMENT OF THE FLOWER GARDEN, SHRUBBERY, &c.

LITTLE can be done in the garden till the beginning of April, at which time you may clean it up, by uncovering such shrubs, rose bushes, &c., as were protected through winter, and cut off the dead stalks of herbaceous plants, and also prune such shrubs and trees as require it; in doing which, observe to cut out all dead wood, and where any of the branches are too long, or grown too straggling, let them be shortened, or cut off as close as you shall see necessary. Where the branches of different shrubs interfere with one another, let them be cut shorter, so that every shrub may stand singly and show itself to the best advantage. When

the shrubs are pruned, let the cuttings be cleaned away, with all the litter in the garden, then place stakes to all trees or shrubs that require support, and fix them upright, firmly in the ground. Tie the stem of the tree or shrub to the stakes neatly, also prune vines and creepers on arbors and trellises, cutting out all superfluous branches, and neatly tying them up.

If the garden soil wants enriching, procure some half decayed manure, and spread it over the beds and borders evenly : then dig the ground nicely between and about the shrubs and plants, as deep as possible, without injuring the roots, being careful to bury the manure.

The bulbous flowers such as tulips and hyacinths, &c., will now begin to appear above ground ; the spaces between the rows should be nicely hoed, and the beds raked over neatly.

All kinds of hardy deciduous trees and shrubs may be safely planted any time in this month, as they will take root very freely at this season, if removed without injury, and carefully planted. Evergreen trees succeed best by being removed about the middle or end of the month.

In planting trees and shrubs in the flower garden, and shrubbery, care should be taken to dispose the various sorts of trees and shrubs in such manner as that they may be distinctly seen from the windows of the house and adjacent walks.

The beds and borders having been dug over, and the plants so arranged that they shall have sufficient room to grow, and show themselves to advantage, let the box edgings have the dead tops clipped off, and

the dead leaves brushed away with a broom, before they grow ; and where the growth is uneven, it should be clipped, and it will then appear neat till midsummer, when it should be regularly trimmed.

The grass plats, lawns, and verges, round the shrubbery, should now be neatly edged with the edging iron, or trimmed close and even with a knife or shears.

When the different beds and borders are planted, let them be neatly raked over that the surface may be perfectly clean and smooth, and have an agreeable appearance befitting the season.

The gravel walks should also be hoed and raked over, and afterwards rolled evenly, as that will render them agreeable both to the sight and to the feet.

Seeds of hardy annual flowers may now be sown such as Rocket Larkspur, Venus' Looking Glass, Sweet Peas, &c., (*see annual flowers, page 152.*) These may be sown in small patches in the beds or borders, where they are to remain to flower. Dahlia roots may be brought from the cellar, and the roots divided, and planted out where they are to remain for flowering, setting the roots three or four inches deep. Gladioluses, Commelinas, and other tolerably hardy roots may also be planted.

As the weather gets warmer, weeds will make their appearance ; these should be destroyed with the hand or hoe, as is most convenient. Where the plants stand wide, let a sharp hoe be used, as it is the most expeditious way ; and take advantage of a fine day to use it in cutting the weeds up clean, within the surface of the ground, stirring the earth between the plants, and cutting away any straggling shoots. Place sticks to

the herbaceous plants that require support, and let them be well secured that they may not take an awkward growth. The sticks should be well proportioned to the height of each plant, for it looks ill to see a tall stick set for the support of a plant of low growth. Rake the beds and borders over neatly, cleaning away the weeds and litter that the surface may be neat and smooth.

The season has now probably advanced into May, which is considered the most interesting time of the year; many of the bulbous flowers are coming into bloom, and other plants fast advancing in their growth; all are becoming day after day more interesting, and consequently require every care of the manager; some will need propping, shading or watering, and many preparations must now be made to perpetuate the gaiety of spring throughout the summer, and autumn; a general sowing of annual flower seeds, both hardy and tender, may take place; carnations should be planted out into beds for flowering; monthly tea, and other roses should be turned out of their pots, for flowering through summer, and the summer flowering bulbous roots, such as tuberose, tiger-flower, basella, &c., and also Verbenas should now be turned out into the borders, or planted in beds; plants of *erythrina crista galla*, should likewise be planted out; and all tender annuals in frames, be duly supplied with air and water, potting all that require it. Chrysanthemums ought now to be separated, and the best suckers selected, and planted out for flowering the next season, and towards the end of the month, Dahlias that were forwarded in frames may be plant-

ed out where they are intended to flower; in a word, all kinds of flowering plants that it is desirable to introduce into the garden, should at this time be set out.

By the beginning of June, the night frost of spring, may be considered as past, and consequently the different parts of the flower garden may be filled up with such plants in pots from the Greenhouse or rooms as are not wanted there, and are eligible plants for summer decoration of the flower borders. Of this kind are the larger sort of Fuchsias, *salvia fulgens*, and *patens*, geraniums, lemon, verbena, heliotropes, &c. Many of the climbing plants, as *passiflora*, *maurandias*, *cobea*, &c., and the seeds of cypress vine, *thunbergias*, and all tender annuals should be sown, and those raised in hot-beds may now be planted out into the flower garden.

The arrangement and distribution of every ornament of the flower garden is at this season a business requiring both thought and action, and one in which the manager should pay some attention to the habits, times of flowering, and colors of his numerous plants, in order that the garden may be as gay and floriferous as possible. Thin out and transplant annuals previously sown too thick; and plunge in the borders all sorts of Greenhouse plants that can be spared. Sow biennial and perennial flower seeds for the succeeding season, and propagate those perennial plants which will grow from slips and cuttings, such as scarlet *lychnis*, double sweet-williams, and any other plants that may be required. Cuttings of tea and other monthly roses, may also be put in, taking the young

ripe shoots of the previous growth, which if shaded from the sun, and protected from heavy rains, will make nice plants by autumn.

Continue to support with sticks, dahlias, and all tall herbaceous plants, which should be duly attended to as they advance in growth, to prevent them being broken down with storms.

The middle of June is a good time to trim box edgings ; it should be done in moist weather, or soon after rain, for if the box is cut in hot dry weather, it is apt to become brown and unsightly. These edgings should be cut very neatly and evenly on the top, and sides, and should not be suffered to grow higher than three or four inches, nor broader than two or three inches. Where box edgings are kept near that size, they look exceedingly neat, but when permitted to grow six or eight inches in height, and perhaps nearly as much in breadth, they have a clumsy appearance, and make the beds and borders look low and hollow.

Hedges of Privet or Buckthorn, &c., that are in the garden, either by way of ornament or fence, should, in order to keep them close, be clipped twice in the summer ; the first clipping should be performed about midsummer, and the second about the middle or end of August ; and as they will not shoot much again the same year, they will remain in close neat order till the next season.

Cut down the stems of such plants as are past flowering, (taking them off close to their heads,) and clean them from all dead leaves, but when it is intended to save seed from any of the plants, leave some of the principal flower stems for that purpose ; also prune

such plants as are of rude branchy growth, so as to form handsome full heads, that they may have a comely appearance. The bulbous flower roots, such as hyacinth, tulips, &c., that are now past flowering, and their leaves dying away, may now be taken, in order to separate the offsets from the parent bulbs.

Any of the flowering shrubs that have made strong or irregular shoots, should now be pruned into shape, either by cutting them out close, or shortening them, as it shall seem best ; and vines or other creepers that are trained over arbors or trellises, should be attended to, by pruning away any straggling branches, and tying up the others neatly to the trellis, any vacancy in which may be supplied by climbing annuals.

As the season is now advancing, the grass plats, lawns, and grass edgings, should be mown, that they may have a neat appearance. In mowing short grass, take the advantage of a dewy morning, or moist weather, for short grass cannot be mowed with any degree of exactness when dry ; and soon after, let the cut grass be swept up, and carried away.

The walks should always be kept clean from weeds, by hoeing and raking, and should also be rolled, to keep them smooth and even, and this should be repeated as often as requisite through the season.

As July advances, many things will require attention: Such bulbs as were omitted last month, should now be taken up, and their places occupied with reserve plants, &c. Biennial and perennial plants may be set out in little beds or spare places in the borders, Carnations may be layered, and roses may be inoculated, as the vital membrane or cambium of both bud

and stock is now in that glutinous state, that a union or attachment to each other readily takes place. Geranium cuttings may now be put in, which will make nice plants by the fall, and all plants in pots should be freely watered in the evening. Some pots may be filled with soil, and plunged up to their rims in the ground, in which mignonette, sweet alyssum, &c., can be sown for flowering in the house in autumn.

Many of the hardy shrubs may be increased by layers from the young wood of the previous growth.

The principal business in the flower garden and shrubbery during the heat of summer, consists in hoeing and weeding the beds and borders, keeping the walks clean, and watering all such plants as require it. Flower seeds of all kinds should be gathered as they ripen, and be spread on sheets of paper to dry, in an airy room where the sun can reach them, and when they are dry and hardened a little, rub them out, and put them in paper bags and boxes till the season arrives for sowing them.

Towards the middle of August, and while the various plants are beautifying the garden, it will be well to prepare for the continuation of floral beauty during the fall and winter months. Many plants destined for the house require shifting or potting, and tying up, that they may be ready to remove into the house by the end of September. The autumnal flowering *Amaryllis belladonna*, *cyclamen*, *oxalis bowiei*, and other bulbous roots, may now be taken out of their pots, and replanted in fresh soil, and they will flower in September or October.

Carnations, pinks, and roses should be layered, if not previously done. Camellias should also be topdressed as it will help them to forward their buds: and cuttings of geraniums and other plants may be put in pots where a supply for the Greenhouse is wanted.

September having arrived, dahlias and china asters will be in perfection, and will require attention in watering, propping, &c.; decayed flower stems and leaves should be removed as the season advances, or the beds will have an aspect of wildness, and betray neglect. As the time is fast approaching for housing the greenhouse plants, the house should be got ready for their reception, and the necessary provision made of pot soils, composts, &c., in order that the work may be done expeditiously, when the commencement of frost renders removal necessary. Where plants are taken out of the ground and potted, they should be placed in a frame, or some situation where they can be protected from the sun and drying winds, till they have recovered their removal. The hardy bulbous and tuberous-rooted plants, as pæonies, lilies, narcissus, &c., may now be taken up, and the roots separated, and planted again, as they will flourish more vigorously than when transplanted in spring.

In the beginning of October, all tender greenhouse plants and monthly roses should be taken up and potted, and placed in the greenhouse. As soon as the frost has stopped vegetation, the flower garden demands attention, for many of the strong shrubs and herbaceous plants that spread from their roots, as well as other kinds that increase freely by seed, are very apt to overrun the more valuable plants which do not

increase of themselves, and if uncontrolled, would soon destroy that variety which it is so desirable to have in small gardens. Much of the beauty and order of a flower garden depends on the preparations and dispositions made at or soon after this time; accordingly, measures should now be taken to improve the quality of the soil, the shape of the beds should be altered, shrubs and herbaceous plants removed, and all other practicable amendments effected. These alterations are very necessary, for gardens that wear the same unvaried aspect year after year, become wearisome to the possessor, who insensibly ceases to feel an interest in their cultivation, and consequently suffers them to fall into decay. A little trouble in interchanging the flowering plants among the different beds, enlarging some, and lessening others, will accomplish all that is necessary.

All shrubs that require it should now be pruned, by cutting out all irregular and superfluous branches, stopping luxurious growths, and removing suckers, so as to form them into handsome bushes; and such as require support should be neatly tied up to stakes. Any herbaceous plants that have spread too much, should have their tops cut off, and the roots dug up and parted, when as much as is wanted may be selected, and reset, about four feet apart, regard being had to the different height of the plants, and the variety of color their flowers exhibit.

All bulbous and other flower roots that remain under ground during winter should have labels or sticks placed to them that they may not be injured or disturbed when the garden is dug in the spring. Take

up dahlia roots, if not already done, and also tuberous tiger-flowers, amaryllis, &c., and cut off the stems and foliage, within one inch of the bulbs, leaving the fibres attached to them. Spread them in an airy room for two or three weeks to dry, after which, clean the roots from the fibres and loose skins, and put them into paper bags or place them in drawers till spring.

About the end of the month, prepare a heap of light sandy loam, and a sufficient number of pots for the reception of as many bulbs and tubers as are intended for flowering in the house, such as polyanthus, narcissus, tulips, hyacinths, &c.,—also get ready the beds for tulips, hyacinths, irises, &c., to be planted next month. Clean up the garden from all litter occasioned by pruning the trees, and dead flower stems, &c., and where the soil is suitable, ornamental shrubs may now be transplanted, as it will save much time in Spring when so many other things require attention. Tall trees and shrubs, transplanted at this time, should be well secured by strong stakes from being rocked by the wind.

By the beginning of November, the beds prepared for the bulbs, as tulips, hyacinths, &c., will be properly settled, and may then be planted. Proceed by marking out the rows, and removing the soil with the hoe or trowel to the depth of four inches. Lay a little sand on the spot where each bulb is to rest, and place them from four to six inches apart, intermixing the colors; then press the bulbs gently into the soil, place a little more sand around each bulb, and return the soil over them; if requisite, some fresh soil may be spread over the bed, that the tops of the bulbs may

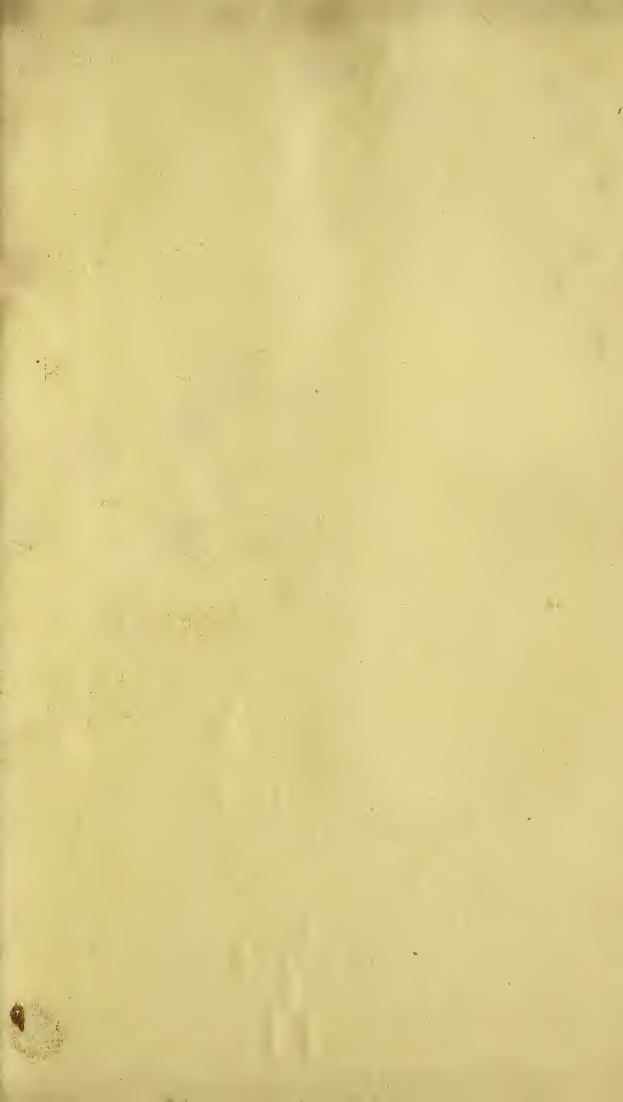
be about four inches under ground, and the beds should be raised that much above the surrounding level. Larger roots, as crown imperials, narcissus, &c. should be about five or six inches in depth, and smaller roots as colchicums, snowdrops, irises, crocuses, &c., from two to three inches deep. If there are more bulbs than are wanted for the beds, they can be planted in spare places in the borders in clumps, by placing six or more roots together in a circle, adopting the same method as that directed for those in the beds. They will then make a very pretty show in spring, and when past flowering, their places may be occupied by annual flowers.

It will now be time to protect half hardy roses, and other shrubs. Let them be pruned of any superfluous and unripe shoots, and tied up in their places with a covering of straw placed round them snugly bound with twine. It is important to do this in good season, for such shrubs are often more injured by severe frosts, previous to the setting in of winter, than during the intense part of it. The flower beds and borders should also have some manure or litter placed on them, to protect the roots of the herbaceous and other plants.

Nothing more will be required to be done than to clean and house the tools, &c., and during winter to examine bulbs and tubers, (removing such as are decaying,) clean seeds, and prepare sticks and labels for the ensuing year; occasionally airing and cleaning such plants as are in frames, cellars, &c.









3 9088 0006 3685

SMITHSONIAN INSTITUTION LIBRARIES